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HYGEIA:

OR

ESSAYS

MORAL AND MEDICAL,

ON

THE CAUSES

AFFECTING THE PERSONAL STATE

OF

OUR MIDDLE AND AFFLUENT

CLASSES.

By THOMAS BEDDOES, M.D.

VOLUME THE SECOND.

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Essay vii. p. 11, l. 10, dele are: p. 22, l. 13, for 5,070 read 570: p. 23, l. 8, for 365 read 290: p. 50, l. 18, for influence read inference: p. 54, l. 5, for knots read knot: p. 68, l. 4, after right insert side: p. 88, l. 26, for ascertained read entertained.

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ESSAYS
ON
THE MEANS
OF
AVOIDING
HABITUAL SICKLINESS,
AND
PREMATURE MORTALITY.

ESSAY FIFTH.

Vol. II.

A

Printed by MILLS, St. Augustine's, Bristol.

———Now have we many chimneys, and yet our tenderlings complain of rheums, catarrhs and poses. THEN we had none but reredosses, and our heads did never ache. For as the smoake in those days was supposed to be a sufficient hardening for the timber of the house, so it was reputed a far better medicine to keep the good man and his family from the quacke or pose, wherewith, as then, very few were oft acquainted.

Harrison's Description of England.

———Without meaning to boast, I may say of myself that my armour was to me as easy as the softest down: and such is my custom that when I now go the rounds of my district, I never take a bed with me, unless I happen to be attended by strange cavaliers. In which case I do it to avoid the appearance of poverty or penuriousness. But by my faith, when I have one, I always throw myself on it in my clothes. Such it is to be a true soldier.—Another peculiarity I have is, I cannot sleep through the night, but always awaken and get up in order to contemplate the heaven and stars. And thus I amuse myself, walking backwards and forwards, as I used to do when on guard, for a good space of time, without hat or cap:—and glory be to God! I never yet caught cold, nor was a jot the worse for it. And this the reader must pardon me for mentioning, it not being from vanity, but that I wish him to know what kind of men we, the true-bred soldiers and real conquerors of Mexico were.

Bernard Diaz del Castillo.

ESSAY
ON
TEMPERATURE
AND
HARDINESS;
WITH
REMARKS ON DIET.

THERE are scarce any topics, which popular writers on regimen labour so little as those of the present essay. Yet there are none better entitled to their care. A hundred pages of plain and appropriate instruction how to secure the advantages of temperature, and how to escape from its mischiefs, would be of more service than a hundred volumes of such discourse as we commonly meet with on the comparative merits of fish, flesh and fowl. There are, in reality, very few persons who are not the worse for their own want of information on this head, or for that of others. Erroneous practices at one time give rise to the most tedious, and at another to the most severe illnesses.

What subject of contemplation is more melancholy than the uncertainty of life during its first stage? What oftener intrudes upon the purest and most placid domestic enjoyments, than the alarming recollection of this uncertainty? What plunges families into deeper distress than the occurrences, from which it is deduced by political arithmeticians? It seems, however, clear that the knowledge and application of a few simple principles, would prevent the greatest part of this alarm and distress. Of two equal lots of infants, I do not entertain the smallest doubt but the mortality would be less by half, in that where these principles should be steadily followed. I will venture to say the same thing of sickness, at this and at every subsequent period; and not of sickness only, but of that comfortless state, which wants a name, but will be well understood by the tenderer part of society, on recollecting their feelings in sharp weather, their greater weariness on waking than on going to sleep, their oppression after meals, and their sufferings on many other occasions, where the rest of animated nature finds solace.

During those epidemic pestilences of the dark ages, which were so destructive as to obtain notice in general history, the people

and the medical faculty agreed to bewail the malignancy of the atmosphere. The atmosphere was accused in cases, where he who ran might almost have seen, that the calamity was disseminated by the grossest kind of contagion alone. But in acquitting the medium, by which we are surrounded, of producing one class of evils, its real injurious influence, if not absolutely overlooked by professional men, has never been sufficiently explained to the mass of those, on whom it is exerted. It is my intention, at present, to do what my own observations, assisted by those of others, will enable me towards supplying this great deficiency. — I shall separately consider different ages, constitutions and circumstances: and thus I hope to furnish most of my readers with data for determining the mode of conduct, best suited to themselves, and to those dependant on their discretion. I only expect that they, on their part, will bring with them common prudence to the consideration of common matters, and not suffer themselves to imagine, that any tricks of medical legerdemain can suddenly repair the ruin, brought upon the human machine by long negligence or gross error.

I N F A N C Y.

If there were safety in the multitude of books, parents would have little to apprehend for their progeny. The literature of Europe abounds with productions on the diseases and the management of children. We have many such in our own language. A reputable living author has collected from his predecessors, with a degree of judgment. He has added some things from genuine observation. It is to be regretted, that he should have unintentionally given his sanction to the arts of common imposition by the needless employment of language, connected with exploded hypotheses.* It is

* For instance—"Every species of this eruption is produced by the same cause as the thrush, but can scarcely be termed a complaint, being a kindly exertion of nature to throw off some ACRIMONY".—Again "otherwise the rash striking in, the ACRIMONY will fall on the first passages." Every body, who has taken the least pains to examine the grounds of medical opinion, knows that there is not the smallest evidence of any kind in favour of the existence of *acrimony*, or of its migration to and fro in the body. And such shallow nonsense from a regular physician to common readers gains credit for quacks, whose advertisements usually run in the

still more to be regretted, that by entering into the treatment of diseases, he should have thrown a temptation in the way of mothers and nurses to intermeddle with that part of medical practice, which is precisely, on many occasions, the most difficult, on account of the obscurity of symptoms in children. It would have been better to omit such dangerous matter, and in place of a few perplexed, indiscriminating sentences to have devoted the space that would thus have been gained, to a copious investigation of the effects of heat and cold. For there is nothing so essential in the whole compass of infantile regimen.

I hope I shall not be thought too trivial if I recommend, that care be taken to provide a fit habitation for the expected little stranger. The numerous opportunities I have had of becoming acquainted with the causes of suffering among the poor, first impressed me with a sense of the importance of this precaution. I have seen severe catarrhs, the

same strain. In this consists the mischievousness of this particular nonsense. Though indeed it is hardly possible for nonsense and falsehood to be innocent, when it is to be reduced to practice upon infants by the ignorant,

most violent inflammations of the eye, and other complaints, produced by a breach in the window, or a by fissure in the wall, opposite the spot where the infant was usually held. In some instances, indeed, the parents, inattentive as the poor usually are, have made the discovery themselves. The same thing has occurred in opulent families. The shrinking of the sash-frame, of a board in the floor, or of some other wood-work has admitted an unperceived, but strong current of cold air, by which infants have been seriously injured.

But it is not only necessary to guard against such mishaps. The fire-place should be so contrived, that even in cold weather a steady temperature of about sixty degrees may be kept up, for the first four or five weeks after birth. The air of the nursery should never be suffered to be below fifty degrees. And I would advise every parent to ascertain this by a thermometer, constantly kept in the room, at the risque of being thought ridiculously minute. No hot-house is suffered to be without an instrument of this kind. New-born babes come from as warm a climate as any exotic plant. They are as tender. And who will say they are not intitled to as scrupulous care? The directions, with which Count

Rumford has favoured the world, will assist in fitting up an apartment so as to be properly warm. And I suppose, few fathers, once convinced of the propriety of a steady, mild temperature, will hesitate to dedicate their most suitable apartment to the health of their offspring. Small nurseries cause many complaints, and many bad constitutions. Leaving the door open for a short time, fills the room with frosty air in winter: and a fire, somewhat too brisk, produces a heat, that will aggravate some disorders, and greatly enervate a habit, constantly immersed in it.

The membrane lining the nostrils and air-pipes is, at first, so susceptible, that the slightest impression will often produce a very sensible effect. Brisk motion, for example, against the air of a room sufficiently warm, will produce both coughing and sneezing, but more certainly the latter. And it had better be avoided. The frequent renewal of this irritation tends to keep up the excessive susceptibility of the membrane. A habit is established, which in some few instances, lays the foundation of asthma at a very tender age. I have seen this disease extremely violent in young children, and have traced it with a considerable degree of probability to

causes, that kept up an original diseased disposition of the surfaces, swept by the air in respiration. Where no striking evil is occasioned at the moment, future complaints of the same parts may be rendered more frequent and severe: and, perhaps, a propensity to catarrh, which is undoubtedly one of the greatest plagues a person can be troubled with in this climate, may thus be generated. There are a number of nurses, I know, who will laugh you in the face, if they hear you express any anxiety about an infant's taking cold. But these ladies do not appear to have been favoured with any peculiar illumination, as to the latent causes or remote consequences of indisposition. And I have known contemners of petty cautions, whose success in rearing children could not be said to add particular weight to their sentiments.

The use of the cool bath, at first, and afterwards of the cold bath, is the safest and most effectual method of taking off the too great sensibility of the membrane in question, and of habituating the whole body to variations of temperature. For a new-born infant I should prefer instant immersion in water at eighty degrees, to washing. There is no occasion to wet above the neck. The infant should be taken up into warm flannel which

should be rubbed hastily, as it lies spread over the infant's body, with the hand for a short time. Another warm flannel should then be substituted for the first. I believe there will be no occasion for adding salt to the bath. But it may be done, if the child do not appear sufficiently comfortable from fresh water. In a week the temperature may be reduced to seventy-five, and progressively to sixty degrees, at which point we may stop for a twelvemonth.

“To see a little infant of a few days old,” says a writer on infancy, “washed up to the loins and breast in cold water, exposed for several minutes, perhaps in the midst of winter; --- itself in one continued scream, and the fond mother, covering her ears under the bed clothes, that she may not be distressed by its cries, has ever struck me as an unnecessary piece of severity.”—But it is not only this degree of severity that calls for reprobation. A weakly child may be easily washed, by ever so nimble a hand, into irrecoverable debility, if the process is regulated by the clock, and not by the state of the subject. It is this, and similar inattentions, which occasion convulsions to be so formidable an article in our death-registers. Irritation will often be followed by

convulsions, or otherwise, according as regard has been had to temperature.—In a hot, dry state I have, at different times, for many years past, ordered the trunk to be washed with warm water, to the apparent comfort of these young creatures. But when the heat arises from inflammatory disease, it will be for the medical attendant to direct.

Some infants are born with a defect in the membrane of the nostrils and air-pipes, or of the *mucous* membrane, as I shall hereafter call it. They sneeze frequently. They are heard to rattle in breathing, or to wheeze. Mucus appears in too great abundance at their nostrils. They are liable to appear more chilly than is usual, even at this age. At the time they breathe hard and have a superfluity of mucus, their hands and feet will be covered with a cold, clammy perspiration. These infants demand the most particular attention as to the temperature, in which they are kept. This attention, and perseverance in the following simple measures, will generally bring the mucous membrane to a healthy condition.

When the extremities are cold and clammy, they should be rubbed before a moderate fire with the hand, or gently with a soft flesh-brush, till they grow dryer and warm. No

pains should be spared. The rubbing at first may require to be repeated many times a day. Merely holding the hands and feet to the fire will not answer. To any one, who has paid the least regard to the nature of animal motions, I need not explain the difference between the effect of external heat and of that excitement of the parts, by which they are made to warm themselves by their own action. The salt cool bath, and in its turn, the salt cold bath should be used instead of the fresh. *They should neither of them be used, in any case, when the child is cold, but rather when it feels above par as to warmth.*

In the clammy, perspiring state I have described, a little chicken broth, or gravy diluted with water, or diluted milk in which spice has been soaked, should be given at the temperature of about an hundred and ten degrees; that is, sensibly above blood-heat. And this in whatever way it is nursed, if the child will take it.

A small vessel for a warm bath should be part of the furniture of every nursery. Warm bathing will be particularly useful in cases of weakness of the mucous membrane. At times, during the chilly state, the infant may be placed in water at the temperature of ninety-six degrees, to which salt has been added.

This will be particularly proper if there should be pain of the bowels at the same time. And, in general, weakness of digestion will accompany the other weakness. The time of continuance in the warm water should be a quarter of an hour or longer, if there be signs of ease and comfort for a longer time.—The warm-bath will be a resource during such sufferings as arise from the thrush, and from teething as well as from indigestion. And it may, in case of emergency, be repeated four or five times in twenty-four hours.—A sloping *bath-bed*, which shall keep the body in a posture between sitting and lying, will be found convenient. A proper frame and soft covering will easily be contrived without a particular description. A small basket with its bottom and side lined, in which the water may just come up to the chin, answers equally well.

When the skin feels dry and hot, children, whether weakly or robust, should be carried into a room without fire, till the skin returns to its natural state. This, when there is no feverish disease, will soon happen. Neither coughing nor sneezing, as I have frequently experienced, will be provoked by this treatment, even where there is the greatest disposition to it at other times.

Nurses, in general, have an exceedingly vicious habit of holding infants at particular times near the fire, without regarding whether they are previously hot or cold. In their feverish complaints, there is the same want of care to accommodate the temperature to the state of the skin. Though perhaps it is not altogether want of care, but sometimes the effect of those mistaken medical opinions, which, in former ages, induced physicians to stove their patients, ill of the small-pox and pleurisy, in hot, close rooms.

It is, by no means, so impracticable as many would fain make us believe, to eradicate these and other prejudices from the minds of female attendants upon infants. But from the experience of the world, it is clear that it can very seldom be done by threats or by commands. Indeed there is much less disparity in the power of apprehension of different ranks, than the superior members of society are willing to flatter themselves. If men and maids have fair play, they will often reason as logically as masters and mistresses. And having once been made to feel that we can only arrive at an acquaintance with the nature of things by experiment and observation, they will with perfect readiness defer to the opinion of those, whom

they believe to have had superior opportunities for observing. Orders and facts are so very different in themselves, that they can never produce the same operation upon any human mind. But obedience will always be more chearful and steady after a reasonable explanation. And this, in the case of infants, can always be given without derogation from authority or any other inconvenience. The interest, which these helpless and tender beings inspire, produces a sense of equality, which is every day expressed in the conversation of the nursery, and from which no danger arises to family subordination. The same interest will ensure conformity and vigilance, when the means of averting evil are clearly pointed out.

I have known an incident as simple as the following, put an entire stop to a system of mismanagement, from which much immediate suffering had arisen, and which threatened serious hurt to the constitution. In the middle of the night, during a smart accession of feverishness, one of the parents finds the nurse sitting up, the child upon her lap, flushed and with a burning skin, and in this condition exposed to the full blaze of a brisk fire:

Parent. *How has she been?*

Nurse. *Oh ! very restless. She has tossed and tumbled about ever since bed-time, without one comfortable wink of sleep.*

P. *Bless me, how hot !*

N. *She has been like a fire-coal these two hours.*

P. *I wish there were some cooling medicine to take off this extreme heat.*

N. *Yes, indeed, I wish there were. The poor thing is excessively feverish. How she burns !*

P. *But since she burns in this manner, must not being so near the fire in this hot room be extremely bad for her ? If she wants cooling medicine, would not cooling air do her good as well ? And is not this hot air making her burn more ?*

N. *But might not she catch cold ? For it always sets her to sneeze, when there is the least breath of air ?*

P. *Did you not hear Jane Saunders, this very week, say how much ease it gave her to be washed with cold water in the rage of her fever ; and how eagerly she cried out, MORE, MORE WATER ? And there are countries where persons in the small-pox are always washed with water ; and they are now, here and every where else, kept in a cool air. So I shall take*

her into the next room, and do you put out the fire. I do not believe it is possible for her to sneeze, or to take cold there with this heat upon her; and if the hands grow cold sooner than the face and body, we will put on her gloves.

The child grew comfortably cool in a quarter of an hour, and slept with perfect composure during the remainder of the night. Nor was there afterwards the smallest reluctance on the part of the nurse to take her out of the cradle or out of bed, even in the midst of a sound sleep, horrid as this piece of cruelty would have seemed before, when her skin felt particularly hot and dry. And she entered cordially into the plan of rubbing the hands and feet, when cold,—as also, of giving food, either below or above blood-heat, according to the state of the skin at the time.

Children, who have either the abovementioned defect of the mucous membrane or general constitutional debility, are particularly subject to indigestion—that common, but by no means necessary plague of our earliest years. I shall, therefore, step aside for a few moments from the subject of temperature, in order to point out a method of obviating one principal cause of that distress, the heart-piercing expression of which is

made by Virgil,* with so much truth of feeling, to strike the ears of Æneas, when he arrives on the verge of the precincts of Pluto. The cause I mean is the perversity of the women usually about children. For it will be found still more easy to convince them out of their prejudices in the case of diet, than in that of temperature. For here the facts can be brought much more directly home to their senses. I have heard a variety of mothers complain that sugar, bread, biscuit and cakes disagreed in the most evident manner, and yet, that it was impossible, by any injunctions, to prevent the one from being made a part of the food, and the other from being given to stop the hiccup, or to produce a sensation that should suspend crying for the moment. After a tedious contest, these mothers have declared themselves obliged to abandon the point altogether. Now it is well known, that perpetually recurring complaints of the stomach and bowels arise from mere *sourness*, and the parties, by whose mistaken kindness or by whose delicacy of ear they are occasioned, are perfectly informed so far. It

* Vagitus infantum in limine primo:

remains only to carry their knowledge a step farther. Respecting the juice of the sugar-cane, it is a very striking particular, that in the West-Indies the purest sort will scarce keep a quarter of an hour in the receiver, without turning sour. This can only be told. - - - The acescent nature of bread, of sugar, and of the various compositions into which flour and sugar enter, may be shewn. For this purpose, it is only necessary that a solution of sugar in water should be made into vinegar. In like manner, bread and sweet cake, steeped in water, should be placed in a heat nearly equal to that of the human body, and the servant be put to taste the infusion when it has become acid. By an address suited to the object in view, there will surely be small difficulty in giving these simple experiments all the effect that can be desired.

I shall very contentedly allow the childless wit to laugh at me for the whimsical idea of tutoring nurse-maids in chemistry. I have a balm at hand for any wound the shafts of of ridicule may inflict. Considerate parents will avail themselves of so practicable an expedient ; and many little sufferers will escape the consequences of an improper regimen. And these are, probably, far more serious even in respect to the future than the

present. For it clearly results from a contemplation of the manner, in which human feelings and ideas gain their connection, that frequent discomposure of the stomach in the morning of life may be instrumental in over-casting its meridian and its close with a cloud of misery, such as neither skill nor fortune can disperse.

Among some of the common people, who deem themselves adepts in the art of managing children, it is a prejudice that those, fed by hand, and probably that others, will never thrive without more or less of solid food; and if the mistake be not corrected, it will induce them to persevere in administering acescent substances to the infinite torment of many nurselings. But the example of young animals, when distinctly pointed out, has proved sufficient to remove this apprehension. And the understanding being once satisfied, there is little hazard, in persons of common intelligence and humanity, lest the will should continue intractable. Need I add, that such only as are possessed of these qualities in a reasonable degree, should be entrusted with the care of beings, so extremely liable to receive irreparable injury from injudicious treatment?

Many writers on education have laid it

to the heart of mothers, not to commit to hirelings the task of *nurse*. Such writers have not, in general, been members of the medical profession. By these, the recommendation will be found a great deal too indiscriminate. And professional men have the best opportunity of knowing the consequences in different instances, and the fairest pretensions to decide, when an exception ought to take place. This interesting office should, undoubtedly, be always undertaken by the parent herself, when it is not likely to prejudice either party. But I am afraid that the reasons for *occasionally* declining it have become continually more and more cogent from a pretty uniform increase of debility among females. And I suspect them for some generations back, to have been somewhat more cogent than has usually been conceived.

The milk, it has been alleged, *disagrees with the child's stomach*.—No doubt it frequently does. But could not the reverse have often been as truly alledged? Does the stomach never disagree with the milk? That is to say, would not the disparaged milk afford perfectly wholesome aliment, where the digestive organs should perform their functions healthily? In such case, the child, undoubtedly, should be weaned *for its own sake*, if

not for that of its mother. And a plan of diet should be pursued under the direction of a medical practitioner, not less conversant in chemistry than in the vulgar routine of our art. The former is a qualification, which nothing can replace. The want of it sometimes, perhaps, levels the practitioners, most busy about ladies in the straw and the inhabitants of the nursery, with the most prejudiced of those women, whom we see busying themselves, with equal confidence in their own talents, in the same department. I shall only add, that preparations from animal substances and cow's milk, with the occasional addition of alkali, saturated with carbonic acid, and by no means always of magnesia or chalk, will form the basis of a regimen, proper under such circumstances. However inexpedient it may be to stimulate the young stomach in its robust state with the extract of flesh, this may be almost the only admissible aliment in a given condition of the digestive organs. Woe be to the attendants upon childhood, when they will not move in correspondence with the aberrations of nature!

But, in truth, these and other cases, where all the assistance required could be easily rendered, are far from being submitted to the judgment of any medical practitioner,

whether competent or the reverse. The subjects of them perish from an imagined incorrigibility of their constitution, or else after struggling out of a first into a second *slough of disease*, they are lost in a third, without the solace of a single smooth or flowery interval in the whole journey of life.

These calamities would occur more rarely but for the two following causes. Parents, in the first place, remain in a state of torpid inattention to temperature, and in some measure to diet, as if the operation of temperature and diet were inconsiderable, because it is not always striking to the inobservant!—Nor is it remembered what the chances are against the persons ordinarily employed, managing in the best manner possible, in these essential respects.—It will not, I trust, be said that the very prolongation of existence does not at first demand the best possible management; whatever difficulty there be in extending the views to the sequel. I do not, as I have said, think lightly of the duty incumbent upon one parent to give suck, where nothing forbids. But it seems to me a duty, infinitely more incumbent upon both, to make themselves acquainted with the incessant and mighty influence of the vicissitudes of the surrounding medium upon the

human frame, that they may guard their tender progeny against the ills, which some of these vicissitudes are so apt to bring upon it, when unsheltered.

On giving this whole subject due consideration, few things will, perhaps, appear less comprehensible than the practice of *nursing out of the house*, or confiding solely in the uninstructed and the undiscerning. I can scarce, indeed, conceive that this practice has ever been followed by any parent, who had once sat seriously down to consider, what are the requisites most essential to happiness in every stage of mortal life without distinction. If we abstract from certain uncommon instances of adoption, what shall we repute the ordinary condition of foster parents to be? What is the condition of those, who are sent abroad to be fostered? Is not the latter evidently such, that if Quintilian properly advise to *commit a beginner to the most skilful to initiate into learning*, the harder task of initiating into life ought not to be committed to the most unskilful?

As to foster-parents, it would be wasting words to describe their deficiency in means, information, expedients, vigilance and penetration. With scarce the ability to

perform the easiest offices, relative to human beings, they are charged with the most difficult. Whatever be the number of ill-starred infants, that may have passed through their hands, it is impossible, without more than a miracle, that their qualifications should have received any material increase. It is the misfortune of mankind, that experience itself can instruct none but those who are prepared for its precepts by art, or by some very unusual bounty of nature. Upon the latter chance, nobody in his senses will reckon, and the former sort of preparation is always wanting to the persons in question. What is the common history of poor families? Why, that a large proportion of the members perish or become diseased, in the rearing.—To what are we to ascribe this? Surely, not to penury alone. Ignorance claims its share.—Nor must those faithful attendants upon ignorance be excluded—heedlessness on the present occasion, and rashness on the next. Does the history of those opulent families, whose heads divest themselves of the superintendence of the members during their most precarious years, differ very widely from that of the poor? I doubt it extremely. Were an inquisition taken, their bill of mortality and their bill of health would, I am per-

suaded, agree in a similar result. And whenever a business, capable of being conducted, in a great degree, according to ascertained principles, shall cease to be carried on at random, fathers and mothers, who have it in their power to provide for the proper accommodation of children, will less frequently have to lament either their loss, or the irreparable personal misfortunes of their infancy.

GENERAL PRINCIPLES FOR A MORE ADVANCED AGE.

A nursery upon the principle of regulated warmth might, in its fitting up, afford much scope for usefully minute ingenuity. In such a nursery, children, born in winter, would suffer nothing even during the most severe weather. Thus, one standing and frequently fatal evil would be banished from society. But in cold seasons the removal of children into the open world should not be precipitated. It is better to be content with habituating them to those variations of temperature, which different rooms in the same house will supply. They should, at first, not be carried into the cooler room but when rather warm, and then for a short time. In

conveying them through stair-cases and wherever they are likely to be met by streams of air, the whole head should be covered with warm calico, in which it is easy to leave air enough to serve, till their arrival in the apartment, to which they are destined. They should be rendered hardy by exposure to a cold calm atmosphere for a short time at first ; and at no time, till they are chilled. They should never encounter rude blasts till they can move briskly enough to produce warmth from within ; and then only at intervals, successively prolonged. When they return home cold, the precautions to be mentioned below under the head *catarrh* should be employed. I speak all along as if the objects, whose security I have in view, were by nature something of invalids. But the parents, who feel a just confidence in the robustness of their offspring, will do no injury by proceeding with a measured pace. I intend that all shall in time become hardy. But we have access to no river Styx, in which one immersion shall render us invulnerable by the elements.

One fatal error seems to be entertained by parents and by many founders and conductors of seminaries of learning. The correction of this error will afford a rule, applicable to the

healthy of all ages and to those who have not deviated from health. It was observed, that many persons, accustomed to be buffeted by storms, so much exceed the inactive fire-side *tenderling* in spirit, vigour and health, as to have a fair claim to be deemed a superior variety of the human species. The effect of certain cold mediums in giving hardness to some inanimate bodies, and in bracing others, or bringing their parts closer together, was joined to the preceding observation. It was also evident to feeling, that the stoutest men have their muscles most braced or most capable of resisting compression.

These several particulars being taken together into account, no wonder it should have been concluded, that to endow a young person with the most desirable qualities of body, there was nothing to be done but to expose him sufficiently to cold. This mistaken system was, indeed, infinitely more prevalent some years ago than it is at present. And many constitutions must have been suddenly destroyed in consequence. Others, originally unable to stand rough treatment, must have received an instantaneous shock, which could never be recovered, to whatever length life might be afterwards protracted. This seems to have been the case with Rousseau,

whose compliance with the custom, once fashionable, of drinking freely of cold water in the morning to benefit the health, manifestly injured his nervous system to a degree, which I am tempted to suppose had its share in producing his subsequent unhappy state of mind.*

The more any one can resist internal and external cold, the more hardy may he justly be reputed. Nor is there any surer criterion of hardiness. But whatever perfection the constitution may, in this respect, have attained, *long-continued and repeated chills will, in the*

* After giving an account of a course, during which he drank two bottles of cold water fasting, he relates the particulars of a seizure, which must be deemed a partial paralytic stroke, since it instantly and for ever impaired his hearing. —“ Dans ce même temps, il m’arriva un accident aussi singulier par lui-même que par ses suites, qui ne finiront qu’avec moi. Un matin que je n’étois pas plus mal qu’à l’ordinaire - - - je sentis dans tout mon corps une révolution subite et presque inconcevable - - - Mes artères se mirent à battre d’une si grande force, que non seulement je sentois leur battement, mais que je l’entendois même. Un grand bruit d’oreilles se joignit à cela; et ce bruit étoit triple ou plutôt quadruple - - - Ce bruit interne étoit si grand qu’il m’ôta la finesse d’ouïe que j’avois auparavant, et me rendoit non tout-à-fait sourd, mais dur d’oreille, comme je le suis depuis ce temps-là.”

first instance enfeeble, and in the second, bring on a susceptibility to the operation of the powers, that superinduce violent diseases. The true principle, therefore, is gradually to inure the habit to cold ; then it may continually be enabled to bear a longer and severer application of it ; but as soon as a chill comes on, be that whenever it may, to stop the process, and to take proper measures for returning to the natural condition without injury, Of these measures I shall say something below.

A middle course must therefore be pursued. It will be sufficiently understood from the facts, detailed in the preceding essays, that between the cold and the sedentary confinement at boarding-schools, girls must almost universally be chilled into debility. But were the school-rooms kept of a comfortable temperature, though much misery would be prevented, the end would not be attained. This class of young persons would not be rendered efficient, happy, and healthy. In their education every circumstance tends to unfit them for such a climate as ours. Such are the facts, and such is the inevitable inference. I am aware that many parents will fully admit both, but that instead of attempting the emancipation of their daughters from so miserable a fate, they will con-

tent themselves with saying—*It is but too true. But all this signifies nothing. The thing cannot be helped. Girls must and will be sent to these places. What else can we do with them? We are obliged to employ all our care in scraping a little something together to put them out in the world.*

The celebrated traveller, NIEHBUHR, relates what he terms *a specimen of the firmness of the Arabs in misfortune* (*Reisebeschreibung*, 4to. I. 354.) “One day,” he says, during his residence at *Beit el Fakih*, “a house on the south side of the town took fire; and the wind blowing fresh from the S. W. the greater part of *Beit el Fakih* became a prey to the flames. Every thing had been so parched by the extreme heat, that the houses, which were covered with grass, and surrounded by dead fences, ran into a blaze the moment the fire reached them. The Arabs were perfectly cool upon the occasion. Not a cry, not a scream to be heard in the streets. But when we condoled with them on their mishap—*It is the will of God*, was the reply. We lodged in a house of masonry, on that side where the fire never came. We mounted the roof, and observed almost all the roofs of the houses of the same con-

“struction as ours, covered with people,
“composedly observing the conflagration.
“A Fakih, or poor scholar, who used to pay
“us frequent visits came this day, after hav-
“ing secured his scanty furniture, and with
“the greatest sang-froid imaginable, pointed
“out his own house, when it began to be on
“fire.—What an Arab loses by such a cala-
“mity,” continues Mr. Niehbuhr, “is not,
“it is true, of equal value with what an
“European loses.—However, though it be
“but a hut, this must always be regarded
“as a considerable loss to a poor man.”

All this is remarkable enough. But ten thousand such anecdotes would never prove the Orientals to exceed us Europeans in fortitude or in resignation, call it which you please—unless indeed any one should contend that a cabin of Yemen is more worth than a virgin of Great Britain. We can look on, while our daughters decline as coolly as the Arab can upon his perishing habitation. Our—*it can't be helped*—has not so pious a sound as the Arab exclamation; but is not the sense the same? And does not the conduct of the respective parties shew that there are as true fatalists under the banner of the *cross* as that of the *crescent*.—Nor indeed do I well know what can be said on the other side of the ques-

tion: except that the wealth which we have been all the time labouring to accumulate for our childrens' sake, may still, if they die, afford us the consolation of erecting over their remains a monument, which every church-goer in the parish shall admire. Or if the machine holds together beyond all calculation, by help of this same wealth we can conceal its rickety state beneath trappings, which a whole metropolis shall eye with envy. And a troop of menials from Parnassus will always think themselves honoured alike in being put to bear cypress at the funeral, or myrtle at the wedding ceremony.

Besides the regular severity of temperature, which slowly undermines the constitution in so many schools, boys are subject to intense and suddenly pernicious chills. In the preceding essay, I have related an instance, where certain effects of cold were brought on during the milder months of the passing winter. This patient informed me that immediately after the rain broke in, as there related, several boys were carried home ill. The accident brought that suddenly to bear, which in the usual course proceeds gradually.

But a prime incidental cause of disease and

debility, I take to be too long continued swimming or bathing. In many, indeed in most school-boys, we may be sure that there may be thus produced any sort of slow complaint, according to the existing pre-disposition, or any sort of inflammation, according as imprudences shall be immediately afterwards committed. No human frame can be tempered so as to resist the effect of water, applied for a certain period, and at a certain temperature. The bosom of the earth hides multitudes, who have been suddenly cut off in their pride of strength by its operation, or whose hairs have been slowly brought down to the grave, before they were grey. Greater multitudes have been reduced by the very same agent to crawl upon its surface, or lie continually groaning under an inability to crawl. This fate befalls the mountaineer of the Highlands and of the Alps. It equally befalls races of men, in comparison with whom the Highlander and the Swiss would seem to deserve to pass for feeble and uninured to hardships *. What then is not to be apprehended

* See what Ehlich (under the name of Dr. J. Reineggs), says of the Lesgae and Duschi tribes inhabiting the very summit of Caucasus.

“ From natural appearances one should imagine that there
“ were no inhabitants. Astonishment is produced at that

from the tenderly reared offspring of parents not particularly robust, if they be allowed to dabble in water at discretion? I do not see how we shall avoid the opposite inconveniencies of renouncing wholesome practices altogether, or of carrying them to a hurtful

“ temerity of rude art, by which the edges of immeasurable
 “ gulphs are joined by bridges; dangerous but passable
 “ roads conducted along precipices, and streams forced into
 “ a course not their own. The exterior of the houses pro-
 “ duces horror. They seem only reclined against the rock.
 “ - - - Both tribes sow their fields in peace. But seldom does
 “ a harvest pass without hostilities. - - - The stronger obtains
 “ the advantage, and reaps where he has not sowed.—There-
 “ fore each guards his field at the hazard of life. - - - The
 “ care of the Duschi for their flocks is extraordinary, and
 “ their vigilance indefatigable.—A young shepherd was feed-
 “ ing his sheep, when the approach of evening, and a vio-
 “ lent and continued fall of rain, obliged him to drive home-
 “ wards. But he met with a stream, which he was obliged
 “ to pass, so swoln and impetuous, that his sheep could
 “ not swim it. However, the dread of becoming the noc-
 “ turnal booty of the Lesgae, or of wolves, urged him to
 “ seek a place of security. He did not therefore refuse the
 “ toil of carrying two hundred and thirty sheep across this
 “ stream. Relieved from apprehension, and content with
 “ the issue of his efforts, he did not seem to trouble himself
 “ about the incurable cramp, which the cold of the water
 “ had brought upon his feet. I saw him in a state in which
 “ his whole lower extremities were immoveable; and now,
 “ at the end of twenty years, he serves as a pattern for young
 “ shepherds.”

excess, without a superintendant who can judge of the effect in every individual instance, regulate exposure according to the resisting power of each constitution, and put an immediate stop to any threatening mischief, brought on by youthful heedlessness or impetuosity.

It will be obvious, if there be any truth in the preceding observations, that no person, already chilled, is fit to encounter a more chilling medium. What can be safely done in a heated state, may call for a little farther explanation. It is clear, from a hundred instances that, when persons are heated, the sudden use of cold water, whether external or internal, to a certain extent, will destroy life and health. In the case of dry heat, however, it appears that * water may be drank and applied as cold, as nature furnishes it, safely and with the advantage of refreshment. But if the application be external, it should be but for a short time. And the quantity drank should be sparing: and the draught should be discontinued the instant there is the least sense of chilliness in the stomach, or rather before any such sense supervenes. This caution is the more neces-

* See Dr. Currie on Fever. Liverpool, 1798.

sary to those who have lived in habits of indulgence. Such persons chill faster than others, and they suffer more from frigorific or cold-producing agents, too freely applied. Our ladies should, for these reasons, be particularly on their guard. Experience teaches them how little they can venture to take liberties with themselves at *certain periods*. But in early life many become victims to this species of indiscretion. I have at present one example under my daily inspection. And a lady of observation has favoured me with the following account of an occurrence at school, from which she has been a sufferer these sixteen years. "A. B. having excessively heated herself at play with a girl of nearly the same age, they heard the dinner bell ring. Being afraid to make their appearance in that situation, [*mark the delicate discipline of these seminaries*], they both dipped their faces into a tub of cold water. They both felt extremely warm at the moment, had not ceased from play, and were perspiring. A. B. was then for the first time in a state that made more than usual care requisite. The almost *immediate* consequence was a violent inflammation in her eyes, and a fever which confined her to her bed for ten days. This ~~was~~ followed by a cutaneous eruption on her

face, which has remained ever since, and has never in the slightest degree appeared in any part of the body. The periodical indisposition did not take place again for three months."

"The other young lady sustained no apparent injury at the time. She was soon after separated from A. B. who did not hear of her again for two years, when she was sent to the Hotwells for a decline. She however grew better, and had one child, but eventually died of consumption. Whether there is any reason for supposing the imprudent act above-mentioned to have had any share in bringing it on, A. B. has no means of determining." Unless indeed some indisposition speedily took place, connecting the first attack of pulmonary complaint with the act of imprudence, I should not suppose that these stood in any relation to each other. There needs nothing out of the common course of things to throw a young woman into consumption; and without the help of forced interpretations, there are warnings enough against the free use of cold water, when people are heated. In a small medical tract for the poor, (published ten years ago, and of which six thousand copies are dispersed among the public), I quoted from Dr. Franklin an authentic ins-

tance, in which four young men, who having worked at harvest in the heat of the day, plunged into a spring of cold water. Two died on the spot, a third the next morning, and the fourth with great difficulty recovered. The effect of the Cydnus upon Alexander the Great has been long celebrated as an example of the danger of sudden cold in an overheated state. An ingenious and experienced writer has endeavoured to prove, that Alexander was exhausted, and perhaps cool from perspiration. But it is too much to flatter oneself that the closest investigation of the case of Alexander can assist in removing any of the difficulties that attach to the particular point of perspiration. Can it be thought likely that any, even of the immediate attendants on the person of the Macedonian monarch, could have given an account, in the least satisfactory to the modern physiologist, of the state in which he plunged into the mountain stream? How much less then can the relation of historians be assumed as the basis of conclusive reasoning? Such speculations, however, must be allowed one important use. In the event of future unpleasant consequences, they will induce an attention to catch and retain the previous circumstances, before they vanish from the memory.

As an essential part of a system of security, I recommend it to mothers and governesses not to make such a crime of a girl overheating herself. She will not then take any hazardous step to conceal her guilt.—During perspiration, when there is as strong a sensation of warmth as is compatible with the perspiring state, and where the system has not been exhausted by fatigue, we may, I think, venture to pronounce it dangerous to apply water of the temperature which springs afford in our latitudes, either to the whole surface of the body, or to a small part. With regard to the whole body, the facts preserved by Dr. Franklin furnish as strong evidence as can be desired.

As to a small surface, the following case, into which I have had the fullest opportunity of examining, appears nearly decisive.—Feb. 4th, 1802, M. A. D. aged 26, applied to me on account of an eruption on her face of long standing. On questioning her as to its origin, she ascribed it to immersion of that part in cold water, when she was hot. Her answers to particular queries, which were extremely distinct, yielded the following information. She was at school and perfectly well. She had never been troubled with any species of eruption, or complaint of her skin. About

midsummer she was thrown into a perspiration by play, and felt very hot, but not at all fatigued. She immediately dipped her face into a bucket of water, just fresh drawn from the spring. She is certain she had no general or partial chill after; on the contrary, her face in a very few minutes felt excessively flushed. Her skin from that time forwards grew more and more coarse, and in the space of a few months an eruption of pimples took place; and they have continued ever since, that is, for about ten years. The patient has also ever since been subject to the most violent flushings after dinner. The skin of the face is evidently altered in its whole texture.

But although in the *glow of perspiration* it seems dangerous to take general or partial liberties with cold spring water, Dr. Franklin is of opinion that “ during the great heats of summer, there is *no danger* in bathing in rivers, which have been thoroughly warmed by the sun, however hot we may be.” And all subsequent experience seems to vouch for the opinion of this great observer. But the continuance in the river should be short. Only when *the chill of perspiration* has come on, then undoubtedly every medium, capable of depriving the body

of warmth, and much more if it conduct heat rapidly, menaces danger. The moist garments should be laid aside, and the body rubbed before a fire. This seems the only safe plan.

The same distinctions ought to be recommended to notice, as to drinks. In the warm state, a moderate quantity of liquid, not less than thirty or forty degrees above the freezing point, may be admitted. But cold water, and still more ices, should be strictly avoided. The chill requires liquids, (as wine and water) above the temperature of the human body, and indeed as warm as can be conveniently swallowed. In case of a chilly seizure from the unwary use and application of cold water, very hot liquids, taken till the contrary sensation arises, would probably prevent all injurious consequences. And at those orgies of courtly gluttony, where we hear of the serving up of ices in such profusion, and where, every now and then, it is the fate of an ambassador to eat himself to death, almost on the spot, I am of opinion that there should always be at hand an urn, full of warm cordial beverage. By a draught of this, at the decisive moment, such serious diplomatic accidents would, I will venture to say, be prevented even more frequently than persons

are recovered from drowning by the measures of the *humane society*. Nor am I acquainted with any contrast more miserable than that which is formed by the ingenuity of the professors of the culinary art in providing poisons, and their stupid neglect of antidotes. And this where the existence of grave personages, charged with the interest of nations, is at stake ! Nor would it be amiss, if sovereigns, in selecting their representatives, were a little mindful of the power of the stomach, as well as of the head !

It may somewhat assist the judgment, if I observe that the effect of any cooling application should be considered as acting through successive moments, or by successive quantities. If a person in a heated state drink half a pint of cool liquid, that may not sensibly reduce him below the natural healthy state. But if he pour down a double quantity at once, the last half pint may be regarded as operating upon the system, reduced by the first, and sinking it into a dangerous chilliness. So immersion for a moment in a sunny river may strengthen and refresh, as many pedestrian travellers have experienced ; whereas delay in the water would be attended with great hazard, on account of the continued operation of a heat-abstracting medium upon a system,

sufficiently reduced in its temperature and in its actions, by the first plunge.

Every precaution, deducible from our present imperfect and inaccurate knowledge, should be observed with double fidelity by females, and by the weakly in general. Perspiration is a process in itself cooling. In the dry heat preceding perspiration, the thermometer in the mouth or at the arm-pit, will stand higher than after the skin has become moist; but in vigorous habits, particularly under the continuance of exertion, the infinity of small but brisk living movements, supply the heat nearly as fast as it is taken off by the oozing moisture; and a chill will not so soon be induced, as where the corresponding movements are fainter.

There remains another most material point, not sufficiently examined by the physiologist. It is one which, to avoid perplexing the common reader, I should at present pass entirely over, did I not apprehend that he might imagine the subject to be more simple than it really is, and reasoning from imperfect data, come to suffer for the very justness of his logic. In the instance of cold water applied to the hot perspiring face, as I have above related it, the injury to the skin certainly did not arise from any chill. The intense glow,

which so immediately succeeded, sufficiently shews this. In fact, the consequence, whether direct or remote, seems to have been an *inflammatory* affection of the skin. A transitory inflammation is always felt upon coming into warm or calm air, after the face has been exposed to a cold wind, and it commonly supervenes in a still slighter degree over the whole body, after the use of the cold bath. It is probable that the continued greater action of the rest of the exterior, and of all the interior, parts of the body, contributed to the inflammation that was here produced. I at least doubt extremely if any inflammation would have taken place, had the whole body been dipped in the fresh drawn water. And I feel almost assured, that so obstinate a complaint of the face would never have ensued, supposing it, after total immersion or affusion, been in any shape inflammatory. It is important to put the reader in mind, that such accidents manifest to the eye, in what manner cold draughts or ices in certain circumstances will produce a fatal inflammation of the stomach. And in the same manner it will be understood how pleurisies and catarrhs (colds) are often caught by breathing cold air in the situation in which M. A. D. found herself when she dipped her face; the air

producing upon the mucous membrane that lines the air-pipes, the same chilling effect as the water did on her face, but more slowly.

The *rate* at which the cooling process takes place upon these occasions, probably occasions a material difference in the result. It is most likely that the greater the rapidity the more the danger, whether it be inflammation, or some other bad effect that follows. I do not here touch upon the disasters which are experienced, when persons under the influence of mercury expose themselves incautiously. I suppose that the system, at the time the imprudence has been committed, was in a more heated and excited condition than during health. And in many circumstances where disease is produced in a healthy, but heated state, I take it for granted that it depends upon the kind and degree of excitation, and would not have occurred, though the system had been even under par as to temperature and action, when it was subjected to the refrigerating power.

There are conditions of disease, which confer prodigious power of resisting cold. I do not speak of insanity, which seems scarce to belong to the consideration of the action of cold mediums in heated conditions of the sys-

tem, unless indeed the opposite testimonies we have from observers of unquestionable faith and accuracy may be reconciled by supposing, where maniacs bore intense cold with impunity, that they were in a hot, febrile state ; and when they appeared as sensible to a low temperature as other mortals, that the skin was cool. Whence it would result that the power of resisting cold, which has been so frequently thought to constitute a peculiarity in the deranged, does not proceed from the derangement, but from fever, accidentally conjoined with it. For it is febrile action, in some of its periods at least, that hardens the frame so remarkably against refrigerating applications. On a journey into the Highlands in 1787, the author happened to pass two nights at a small inn by the river Tummel. A low fever raged throughout the country ; and among several persons ill in the house, a maid servant was distinguished by the violence of her symptoms. It was the sixth day of the disease. The author, after examining her situation in the morning, ascended Schehallien, and on his return was surprized at hearing that this girl was nearly well, all but weakness. In her delirium she had uttered a desire for cold water, which being withheld, she had crawled during t!

absence of attendants to the brink of the river, from which she immediately perceived a herd of cattle with the drovers at some distance, on their way to cross the bridge. The sight induced her to make for the water, in hopes of concealing her nakedness. She waded up to her middle, and leaned against a fragment of rock. Nor was it till one of the drovers turned his horse towards the inn, that she was discovered in this position; and it was believed that she had occupied it not less than five minutes. Her delirium was gone; and the symptoms of fever had quitted her. Dr. Baynard, among other equally singular and apparently authentic examples, relates of a young man ill of the small pox that he escaped into a pond, and continued in it and in his wet shirt, while an apothecary was fetched from three or four miles' distance. Two physicians to the army, Dr. Sinnot and Dr. Sutton, have attested that during the rapid retreat of the British troops from the banks of the Waal to Embelen, in the dreadful winter of 1793 and 1794, the fever-patients, though carried in open waggons, universally recovered. And by the accurate researches of Dr. CURRIE, it has been established that in the dry heat of fever, the affusion of cold water has a most salutary ef-

fect, and that, on repetition, it seldom fails to subdue the disease, if employed during the first stage.

I introduce these facts to give weight to the following rule, respecting the cold bath. There are very few circumstances, in which cold bathing will not be safest and most advantageous, if the bather, immediately before immersion, exerts himself enough to produce a gentle sense of warmth. There are no circumstances where an unprofessional person should omit this precaution, without the express injunction of a practitioner of medicine. Weakly people every day destroy or injure themselves by going into cold water, when they are not sufficiently warm. The robust themselves probably bring down the tone of the system by the same inadvertency. For this reason, I can see no sense in the common notion, that it is best to bathe with an empty stomach. I would not recommend the cold bath to a person full-gorged. But it is desirable that the stomach should be in a state of gentle activity, as well as the external surface of the body.

It has appeared to me, in one or two instances of grown people, that a diarrhœa was induced by the cold bath, in consequence of the stomach being empty and inert at the

time of its use. I am certain that in feeble infants the same effect has followed, when the water has been even up to seventy degrees. When this happens, the temperature should be raised, and a small quantity of warm and spiced food should be given shortly before the infant is dipped. The sense of greater alertness and greater power to resist both cold and heat, are the surest signs that the water has been at a proper temperature, and that the whole process agrees. In infancy there is often, in a very short time, an evident increase of ruddiness, and a heightened complexion indicates, with considerable certainty, increased vigour of the whole system, as could be easily shewn by entering into physiological discussion.

The use of cold air is more ready, safe, and agreeable, than that of cold water. It is to the mere abstraction of heat, and not to any recondite quality that we owe, nine times in ten, the refreshment we experience on going abroad into the open air, when its temperature does not verge towards either extreme. It is from the same source that the few, who spend much time in the open air, without being chilled, or overworked and underfed, derive that freshness of feeling by which they are distinguished from sedentary mortals.

Were it not for field sports, and for some morning use of the limbs during a town residence, our gentlemen would be nearly as puny, and as liable to diseases of debility, as our ladies. The manner in which most advantage may be drawn from cool air, will be understood from the first part of the following section. I leave it at present to writers for the profession, to consider whether cold air would not answer in those advanced stages of fever, where affusion with water may be unsafe or ineffectual.

HARDINESS.

Hardiness, the most enviable of all the attributes of animal nature, can neither be acquired nor recovered but on certain terms. There are indulgences, and unhappily of the most common kind, with which it is utterly inconsistent. The gratifications of enfeebling luxury may possibly be preferred by some, from a mistaken idea that they can find new means of rousing the blunted senses after the former stimuli have lost their power, and that they can always shelter themselves against those natural agents, that seldom fail to bring disease upon the tender. If, indeed, they

make this choice on deliberate comparison, all argument is at an end. It is however but fair to apprize them at what cost they purchase their gratifications. Let them only not look to the enjoyment of incompatibilities. A man may as well expect to break both his legs and be able to run a race, as to weaken the tone of his frame, and be able to encounter the rigour of the elements with impunity, or to be subject to the ordinary exciting causes of sensation without pain. After this explanation, let those who will not or cannot renounce practices demonstrably ruinous, lay aside the remainder of this essay. Others may avail themselves of the succeeding pages, to preserve what of their fund of vigour they have left, and to enhance it, if unimpaired.

One of the causes that contributes most materially towards the reduction of persons, living at their ease, below the standard of hardiness, is the dependance they place upon external warmth for preserving a comfortable state of sensation. Thousands of experiments made for the express purpose, and universal experience with regard to the human race and to domestic animals, agree in one point. They shew that *continued warmth renders the living system less capable of being called into strong, healthy, or p'ceasurable action.* Every

muscle, steeped in a heated medium, loses of its contractility. Every nerve grows languid; and, when excited, acquires a disposition to throw the moving fibres, with which it is connected, into starts, shocks, twitchings, and convulsive movements of whatever denomination.

Those therefore who have not accustomed themselves to sit in warm rooms, should most carefully avoid making this unwholesome indulgence necessary to themselves. Others should, by degrees endeavour to render their comfort independent of it. For this purpose they should retreat out of their *stoves* at short and frequent intervals. They may easily, by a little attention, discover times, when the open air will be more grateful to the sensations, as well as more salutary to the habit. Those who complain of being most chilly in common, have their periods of dry heat: and then they will always find a cooler atmosphere pleasant and refreshing. One such period will often occur after dinner. And on that account, it were to be wished that we took our principal meal at an earlier hour; for we should be able afterwards to enjoy the benefit of the air, during a much longer portion of the year, by day-light. It would be better still, if breakfast were a more nutritious meal,

and in the case of the puny, if it consisted of some preparation of milk or of animal substance, without tea or coffee. A short walk in the air, or pacing backwards and forwards in a room without a fire, will take off the unwholesome and strength-consuming after-dinner flush. But instead of availing themselves of the mildly cooling quality of the air, our genteel multitudes do every thing they can to add to the over-stimulating operation of dinner. After taking strong wine with their food, they sit in rooms rendered progressively warmer all afternoon by the presence of company, by the increase of fire, and, for more than half the year, by early closing the shutters and letting down the window-curtains. At a short interval, tea or coffee succeed—liquors stimulating both by their inherent qualities, and by virtue of the temperature, at which they are often drank. And that nothing may be wanting to their pernicious effect, they are frequently taken in the very stew and squeeze of a fashionable mob. The season for sleep succeeds; and to crown the adventures of the evening, the bed-room is fastened close and made stifling by a fire. The robust are not so easily thrown out of the medium temperate state. The feeble, as I have said, are over-heated or chilled with

nearly equal ease. And these, as they usually manage, rarely pass a few hours of sleep without feverishness and uneasy dreams; both which contribute to their finding themselves by far more spent and spiritless in the morning, than after their evening fit of forced excitement. Perhaps they drink tea before rising, and indulge in a morning, noon, or afternoon nap. This nap weakens much more than the greasest muscular exertion they would be capable of supporting for an equal time. For it is almost invariably disturbed, and attended by dry heat of the skin. The reason is plain. Almost every person is rendered more susceptible to the heat of the bed by a night's sleep. Much more those who are so liable to be heated by slighter causes. And the tea acts, if not so powerfully as to be an absolute sudorific, yet as a stimulant of the whole surface. The remedy for this is obvious at least, if in consideration of the power of habit and example, it cannot be said to be easy. It consists in deserting the heated rooms at least for *part* of the time they have been usually occupied—in abstaining from the strong wines of our tables—in forbearing to drink other hot and heating liquors—in renouncing the crowded resorts of fashion, and in extinguishing bed-room fires,

except during severe weather, when the temperature should not be raised beyond fifty degrees *. When young people appear to be on the decline, and especially when they complain of unrefreshing sleep, they should be examined in the night, and be awakened without compunction, if found too warm. The bed-clothes should then be thrown off, or if the dry heat be considerable, it will be best to walk up and down the room in a

* A writer on regimen must frequently find it necessary to pause and review what he advises, lest any thing, too generally put, should mislead simplicity or arm malignity with a pretext. Inadvertent parents lodge in every street, and I am too much afraid I have once or twice in my life fallen upon the track of such as have the art of harassing their children to death, without subjecting themselves to legal animadversion, and indeed carrying towards the world a face of the utmost tenderness. To caution the one, and to prevent the other from making sinister use of my authority, I here expressly subjoin that the direction for extinguishing bed-room fires is not to be extended to the time when girls are dressing for public places in winter. I have known dangerous complaints take place apparently from this cause, in families where a parental prohibition issued against a fire on such occasions, though the voice and feelings of a daughter joined to call for it. When one considers what a frequent business it is at some places, as at Bath or at Clifton, to prepare for the ball, it is not too much to assert that one season's dressing in the cold, may undermine the firmest female constitution.

dress, which should be contrived for guarding the hands and feet from chill, while it suffered the trunk of the body to be freely ventilated. Those who have courage to persevere in these measures for three months, will often be rewarded with a return of some portion of their lost vitality. They will shiver less at one time, and flush less at another. They will be recruited, and not oppressed, by their food. Their ears will be less subject to ringing; they will start less at sudden noises; the general tenor of their feelings will cease to be comfortless; they will not catch cold from every shower that moistens the *surface* of their garments, and every breath of air that strikes a part usually covered; or from every slight insinuating damp that comes in contact with the feet. From being less debilitated by the perpetual stimulus of warm air, the *mucous* membrane that lines the nostrils and air-pipes, will be less liable to be affected by slight vicissitudes of temperature in the atmosphere: and we shall hear less of catarrhs.

There is a class of persons who lead a sedentary and a solitary life, to whom I particularly recommend these considerations. They have frequently a literary turn, and feel very little anxiety to accommodate their habits and

appearance to the taste of fashionable ignorance and folly. Such persons may greatly benefit by some of the preceding directions ; and that with scarce even a momentary sacrifice of feeling. They have only, for their hours of study, to contrive a dress which shall keep the extremities sufficiently warm in a temperature of about fifty degrees. The eyes of people, who read and write a great deal, not only come to feel painfully, but vision is at length impaired. And this happens not so much from the mere exercise of the organ, as from the degree of heat in which it is exercised. If a number of persons, who complain of that burning and stiffness of the eyes, to which the studious are so frequently subject, will make the experiment and compare notes, a very few evenings will satisfy them as to the result. The nervous head-ache, to which the same persons are sometimes liable, may possibly be prevented in the same way.

Exercise is another expedient for getting rid of the necessity of living in the unwholesome climate of a hot and close apartment. The feeblest and most delicate might devise some employment, which should enable them to support existence, for a short time, in a temperature below that to which they have been

accustomed. These intervals may be successively prolonged: for the beginning only of the road back to health, as in other matters, is irksome. But every half hour, spent out of the carpeted, stuccoed, and stoved sitting-room, will contribute its mite towards the redemption of the constitution from oppressive languor and sickliness. The lathe I have already mentioned, and gardening. I have known these two resources produce the effect in a greatly debilitated habit. Many chemical operations are attended with sufficient muscular action to prevent chilliness. It is a great happiness for a child to have been taught the use of mechanic tools, as this will always render deliverance from indolent habits less difficult in subsequent years. Walking I cannot recommend for walking's sake. I think we actually find it of scarce perceptible service to health. But in quest of mineralogical or botanical, or indeed of any other objects, it will sufficiently stir the blood and cheer the mind.

Exertion in a cool temperature will tend greatly to mitigate the propensity to catarrh (catching cold) which is the daily plague of many persons. But in resorting to cool air within doors for refreshment, when they are overcome, it is necessary for them to be ex-

tremely cautious, unless they do make some exertion at the time. If the door be opened, the stream of air flows against the feet, where the air of the room is warmer than the external atmosphere. In sitting near high windows, the head will be disproportionately cooled. In both cases the trunk of the body, which needs cooling applications most, and bears them best, will be little affected. A catarrh will be the general consequence; rheumatism sometimes. And the different parts will imperceptibly acquire the morbid habit of being in opposite states as to temperature and action at the same time, so that the feet shall be stone-cold, while the face and chest burn. And this will be an eternal source of teasing complaints. A disposition of this nature may be generally corrected. But its correction will require great judgment and experience in medical subjects, and cannot therefore properly enter into a popular tract.

The article of dress, as far as dress is a mere covering, requires very little discussion. Weakly people should put on clothes enough to keep themselves comfortably warm. When the animal powers are languid, it is indeed nearly impossible to keep the extremities warm. Whence, in Holland, the women have been obliged to have recourse to a particular

apparatus for warming their feet. But for this purpose there is in reality only one good and wholesome expedient, *bodily action*. However there is no comparison between a load of clothes in cool rooms, and light dress in hot rooms, where these two circumstances only are to be taken into account. Those who follow the former usage will escape innumerable illnesses, to which the followers of the latter will be subject. In the one case, the mucous membrane will be enabled to resist the vicissitudes of the atmosphere. In the former it will be so tender, that very slight changes of atmospheric temperature will throw it into disorder. And not only so: but cold or moisture applied to any other part of the body, will be the cause of injury to that membrane. This will be the weakest part; and it is a common observation, that what tends to induce disease, wherever it be applied, will affect the weakest part. Metaphysicians, and indeed medical writers, express this observation in more learned terms. But it is sufficient to be sensible of its truth. It holds alike with respect to every organ. In the instance of the mucous membrane, the Dutch and English are two nations, where the experiment is daily repeated upon an immense scale. The Dutch are comparatively but little subject to harass-

ing indispositions or serious diseases, affecting that membrane. But these are the national diseases of the English. The habits of the former tend to keep the membrane in a robust state; those of the latter to reduce it to the extreme of diseased sensibility. Some years ago, when employed upon an essay on consumption, I had the good fortune to procure on the subject of the Dutch and English, one of the most valuable contributions towards the history of the health of nations, that has ever been presented to the public. It comes from Dr. Cogan, a writer well known in the literary world. Dr. Cogan from a long residence as physician both in England and Holland for a great number of years, was better perhaps qualified in such a case to give information, than any other person in Europe. "I remember" says this observer, "when I had the pleasure of seeing you, to have remarked that the Dutch, and even the English, who had resided some time in Holland, were forcibly struck with the coughs (whether catarrhal or consumptive) so universally prevalent in this country (England), at almost every season of the year. At church and at the theatre, devotion and pleasure are always interrupted, and sometimes totally destroyed

“ (here) by incessant coughing and expect-
 “ tation, while in the largest assemblies in
 “ Holland, *instances of a similar kind are*
 “ *hardly known.* This very striking differ-
 “ ence I have been induced to ascribe to the
 “ contrast observable between the two coun-
 “ tries *in the construction of their habitations,*
 “ *and in the peculiarities of dress.*”—The
 doctor then goes on to describe the coolness
 of the Dutch apartments, and the warmth of
 the cloathing. A Dutch woman, says he,
 feels herself insufferably oppressed in an apart-
 ment we should deem moderately warm. And
 as all accounts represent the ladies of Hol-
 land as nervous or feeble, it seems to be a
 clear inference that a formidable portion of
 unhealthiness and mortality in England de-
 pends precisely upon the effect of our oppo-
 site customs in regard to clothes and lodg-
 ing.

HOW TO ESCAPE THE COMMON DISEASES FROM VARIATION OF TEMPERATURE.

There are a number of common complaints,
 in most instances arising from the vicissi-
 tudes of temperature solely, though they are,

strictly speaking, excitable by other causes also. These disorders, by frequent repetition, injure particular organs, and, after a time, totally destroy the harmonious movements of the system. When the mischief falls upon vital organs, and rises to a certain height, it of course proves fatal. No nation is infested with a greater number of these complaints than the English. We owe them to our variable atmosphere, acting, as already intimated, by favour of imprudent habits. The principal of these complaints is the *catarrh*, vulgarly denominated *a cold*. When the powers producing it operate with great intensity, in infants it becomes croup, or at least one kind of croup, and pleurisy or peripneumony in adults. These several maladies seem to differ but in gradation and in their seat, but agree perfectly as to the manner in which they are commonly brought on. Inflammatory rheumatism has the same origin. To occasion the one or the other, it is only necessary that this or that part shall be most exposed to the agents proper for exciting it.

The opinion prevalent among the faculty and the public, was not only erroneous concerning the production of these diseases, but directly led to the most dangerous management. Within these few years the mystery

so long hidden, was unveiled by the sagacity of Dr. JOHN BROWN of Edinburgh, an author of powerful genius, whose merits and fate form a striking contrast with those of the *petits maitres* of physic that figure as favorites of the great. The discovery deserves to be regarded as one of the most ingenious and happy combinations ever formed by the human mind, and in relation to these islands as perhaps eventually the most useful, recorded in the annals of medicine.

That complaint of the membranes of the head, windpipe, and chest, which properly deserves the name of *hot* or inflammatory catarrh, is not owing simply to cold. Except in a very few instances, where acrid fumes are inhaled, it never takes place but from the concurrent or successive action of cold and heat, or of stimuli, equivalent to heat. The ordinary process is the respiration, first of a cold, and then of a heated atmosphere. But after breathing the cold air, it is not perhaps absolutely necessary, even at first, that the immediately exciting stimulus should be warmer air. The reception of hot liquids into the stomach will probably be followed by the same consequences. It seems also certain that if the body be warmed by strong exercise, a catarrh will be produced by in-

haling cold air, provided the increased action of the rest of the body keep up for some time, as will generally be the case. But after the repeated occurrence of this troublesome complaint, the first step in the process ceases to be indispensable. The liability of the mucous membrane to be affected, increases with every repetition. And from the rapid communication of the parts of the living system with each other, by which what comes in contact with any one will influence another, ever so remote, catarrhs are brought on by the most trivial seeming operation on a distant member. Thus leaving bare the arm for a few moments, if it have usually been covered with a glove, the slightest moisture finding its way to the feet, a quantity of rain not sufficient to wet a handkerchief through, shall produce an instantaneous sneezing, and a speedily following inflammation of the mucous membrane. This shall pass from spot to spot down the wind-pipe into the chest, and keep up an irritation to cough for many weeks. In this state the membrane being probably more than usually prone to inflame, causes still slighter, if possible, than the first, shall re-produce the whole series of symptoms for six months together. Variations of temperature too slight to be sensible to the nerves

of the skin, shall give rise to all this continuance and severity of distress, when the membrane has once been rendered highly susceptible. So true is it that we may easily bring ourselves to such a pass, as not often to know *how we take cold*. Since the slightest cooling cause, succeeded by the slightest heating cause, or concurring with an exertion that scarce perceptibly increases the animal actions, is in very delicate people adequate to the effect, the order of events might for ever have remained undiscovered, if in others the phenomena had not been more distinct.

It is common to the whole exterior surface of the body to be thrown into a state of violent action, if it be first cooled, and then suddenly heated. Single parts are affected in the same way. The effect of the cold bath is one of the slightest general operations of this nature. The skin is rendered so susceptible by the application of the cold water, that a glow is brought on by the contact of air at so low a temperature, that perhaps it chilled but the minute before. Coming out of the cold air into a warm room, produces lively and continued warmth in the parts that have been exposed. A hand dipped in snow, and then held close to the fire, is stimulated into more consider-

able, and even painful action. It is now not an agreeable transient glow, but a burning or throbbing with an aching. The preparatory cold was more considerable. The exciting heat more intense. The affection of the hand therefore more violent in proportion. It is well known (and this is the extreme effect of the causes in question) that frozen limbs will inflame so as to mortify, if they be not very carefully kept from the contact of mediums, which are considerably above the freezing point. It is on this account that to be restored, they are rubbed, according to a practice long established in cold countries, with snow.

The membranes, which the air sweeps in respiration, appear still more liable to be thrown into an inflammatory state than the skin. When the nose has been chilled by frosty air, applying a heated handkerchief will bring on a sneezing, and sometimes that inflammation of the membrane lining the nostrils, and communicating cavities which we call a *cold in the head*. In medical language it is named *coryza*. But these are frivolous distinctions. By attention to the circumstances preceding catarrh, every doubt as to the manner of its taking place will be dissipated, if the mucous membrane of the observer be not already too diseased to admit

of distinct perception of the successive phenomena. None of that stuffing in the head, or huskiness in the throat, which mark the beginning of this complaint when the person is of a hardy constitution, and not very liable to catarrh, will be felt as long as he continues out of doors. But after seating himself by the fire, he will begin to feel universally on fire, and these sensations will be very distinctly perceived. And in addition to the feelings about the passages of the breath, feverish shiverings, attended by a quicker and stronger pulse, will succeed. And if the cold to which the system has been exposed was considerable, and the apartment be heated, and warm spirituous liquors be taken, a very severe catarrh will not fail to make its appearance, and perhaps a pleurisy in full form come on. The original feverish feelings, belonging to inflammatory catarrh, when at all severe, are very easily confounded with those at the beginning of the most dangerous eruptive fevers, being in fact of the same nature. I have, for example, known a patient, who had inadvertently caught the natural small pox, keep close by the fire-side all day long, and fill himself with warm liquors, under the idea of having taken cold. The consequence has been confluent small

pox and death. And from the uniform result of experience, there is no doubt but the disease must have been excessively aggravated by the mismanagement that preceded the eruption.

When the supposition that *it is only a cold*, happens justly to apply to symptoms like these, such a method is of all others the one most calculated to render it as severe as possible. The warm air that is respired, and the the warm liquids that are drank, concur in carrying the inflammation to the greatest height. Cool treatment is just as necessary to prevent catarrh, as to mitigate the small-pox. The analogy of frozen limbs should be strictly followed. We cannot indeed rub the nostrils, and the continuation of the mucous membrane with snow or cold water. But we can do what amounts exactly to the same thing. We can keep an atmosphere, not much exceeding in temperature that by which these parts have been chilled, traversing them for any length of time. When the dryness in the nostrils, the huskiness in the throat, and the other feelings that denote the commencement of catarrh, have arisen from the chill of a distant part, the same expedient will be equally proper for prevention or mitigation. Even when there has been scarce any

difference in the state of the air, by which the wind-pipe and its branches have been chilled, but in respect to motion, I have known a very considerable glow over the whole body, and corresponding sensations in the nostrils and throat come on, when a person has continued to walk about in the calm, or in an apartment without a fire. So considerable is the effect of a rapid current of cold air in carrying away their heat from the animal surfaces! But in this case, the external and internal glow both passed away without leaving a permanent increase of action, or fixed inflammation. The effect of continuing for a time in a low temperature, after a chill of the mucous membrane, may be materially assisted by drinking cold water. And where there is a strong propensity to catarrh, the food should be taken cold, and all warm and heating liquids be carefully avoided for the day. For I have sometimes known a disposition to become inflamed, remain for many hours after all action, strong enough to excite distinct feeling, had ceased through the extent of the mucous membrane.

In a variety of cases, mankind act upon associations formed by sounds, without further enquiry. What more natural therefore, than that he who has contracted a disorder

called *a cold*, should expect to remove it by heat. The unquestionably just observation that cold has its share in the origin of this disorder, no doubt gave rise to the denomination, and contributed to make people inattentive to the succeeding heat. And after the inflammation has fully subsided, a warm temperature may have been felt useful in stimulating the weakened surface, and putting an end to the defluxion. In order to destroy the delusion, however produced, nothing can be more expedient than to banish the received term. I therefore risk the imputation of pedantry in using *catarrh* instead—leaving it to others to weigh the merits of this word against *rheum*, which is found in our older medical writers. It is in truth synonymous with *catarrh*.

Some authentic accidental occurrences, recorded within these few years, add considerably to the above evidence. If a low temperature alone produce the inflammatory *catarrh*, it should seem as if long exposure to it ought to aggravate that disorder, or at least to keep it up when formed. But severe cold has, on the contrary been found to effect a cure in a very short space of time. One of the most striking instances is minutely related by Dr. Hamilton of Ipswich, in a letter

to the author (*West Country Contributions*). A boy in Dr. Hamilton's service, with a considerable cough and febrile heat, played the truant one evening in February 1797, and passed the whole night, walking or sitting in the streets. The night was the coldest of that season;—the thermometer, at 7 o'clock the next morning, standing at 10 degrees below the freezing point.—“The boy's complaint, says Dr. Hamilton, was somewhat alarming; and I felt considerable uneasiness lest it should increase from his being first heated, as I presumed by play, and then suddenly cooled by the frost.” “During the interrogation he underwent next morning, I observed he did not once cough, although in the same space of time, ever since the commencement of his catarrh, the cough would have often harassed him and interrupted his narrative.”—“I watched him narrowly, as I apprehended a fever might be the consequence of his midnight ramble. But here I was agreeably disappointed; for, in place of fever, his catarrh was cured, his cough ceased, and never afterwards returned.” The same physician cloathed a ragged old soldier, turned vagrant, in warm garments lined with flannel. Before putting on his new and entire garb, his bare body had been buffeted by

rain, snow, and sleet. Next day he was very ill with catarrh, attended by fever; and the succeeding day his complaints increasing, he threw off his warm clothes, and betook himself again to his rags, swearing *his warm clothes had killed him*.—No doubt former experience had taught him that he could bear the severity of the elements in his rags with impunity. So that here, after a chill, the unusually accumulated warmth of the exterior surface of the body, seems to have had the same effect in bringing on catarrh, as warm air generally has on being respired. In an incipient catarrh, those who follow the example of Dr. Hamilton's boy, so far as to continue moving in the cold for some hours, will find it greatly reduced, if not taken off. But they must not afterwards heat themselves. They may sit at times, as well as walk, covering the extremities so as to prevent them from being chilled. The object is to apply a cool medium to the inflamed mucous membrane. It is probable that giving up a single night's sleep would be attended with the happiest effect in such cases. The heat of the bed-clothes, (like the warmer dress of the military vagrant above mentioned) and the change which sleep itself induces on the system, are unfavourable in inflammatory

diseases. In the croup, in the scarlet fever, in analogous complaints, and probably in low contagious fever, it would, I believe, be much better to lay the patient upon stretched canvas, supported by tressels, instead of a bed.—But the childish demand among the opulent for toys and tinsel ornaments has heretofore so much and so mischievously engrossed the arts, that the essential accommodations of humanity are utterly neglected. But some time or other, (and may it be soon!) an ingenious mechanic will deserve nobly of mankind, by contriving a species of household furniture, sacred to the relief and preservation of the sick.

On minutely considering the production of catarrh, and the more serious maladies of the same parts, many remarks present themselves. But every attentive observer of his own feelings, once apprised of the true principles, will find out how to adapt his measures to his own circumstances. And to enter into individual peculiarities would be endless. I shall, therefore, content myself with singling out one or two cases, more important than the rest.

When there happens to be a triple succession of variations of temperature, there appears reason to believe, that the mischief

will always be greater. I suppose, for instance, a young person, leaving an assembly-room in a perspiring glow. He is then exposed to a cold frosty night. And tremblingly alive to its rigour, he rushes to the fire-side, and drinks freely of hot wine and water. The case, indeed, may sometimes be simpler. It may be similar to immersion of the face in cold water, the rest of the body continuing strongly excited for some time afterwards, and a partial chill falling upon the air-pipes only. But if the renewed stimulation, subsequent to the influence of the cold, should be strong, the inflammation will, perhaps, run higher than in less complicated circumstances. For the effect of the chilling power will be much greater, if it act to a certain extent, than if the part had been in its ordinary state. Thus on sitting down, while we are warm with perspiration, in an apartment at other times comfortable, a sense of cold will soon come on. After hectic sweats, we always find the patient chilly; and in the same state from sudorific medicines, the continued contact of a cold medium is dangerous. It results from these facts, that there is a greater propensity to chill in the state of moist warmth, and, perhaps also, in a dry heat during health, where the application of the

cold-producing cause is prolonged beyond the reduction of the system to its average temperature.—I say, *during health*, because in the early stage at least of fever, the diseased action generates animal heat for a considerable time nearly as fast as the most rigorous atmosphere in our latitudes can carry it off. Though from some observations it would appear that if the heat in fever be sunk below par by sudden application of cold water at an improper time, the shock will be dangerous or irrecoverable.—Should this distinction concerning a triple succession of exciting and depressing powers be found more subtle than just, it will still remain an indubitable fact that particularly violent catarrhs and pleurisies, and still worse complaints, follow exposure during the warmth of perspiration. The whole difference may indeed depend upon the particular susceptibility of parts to chills, when they have been excited to perspiratory action. A knowledge of the simple fact is sufficient to demonstrate the necessity of extreme caution in such a condition.

It is needless to enter largely into the consideration of rheumatism. Whatever measures are calculated for the prevention of catarrh, will also prevent rheumatism. And

in the coldness of external parts, we have the advantage of applying friction; which should never be neglected when they have been considerably chilled. It is probable that the effect of friction on living substances does not agree with that of heat in any respect, except in throwing them into an action, by which warmth is generated. The accompanying animal motions I suspect to be different in some material points. Friction with bodies not previously heated and changed the moment they become so by this use, will not stir up the inflammation, which heat and heated liquids are so apt to do.

The consideration of the seasons is not indifferent to the enquirer concerning the prevention of catarrh. *Beware the ides of March!* said the soothsayer to JULIUS CÆSAR. *Beware the ides of March!* is a caution which every writer on regimen may with equal propriety address to the delicate, and to the superintendants of children. From the foregoing detail, it will without further explanation be perceived how easily catarrh may be occasioned by the contrast of the vernal sun and shade. Nor is it only the aguish nature of the season that threatens the weakly. By virtue of their peculiar properties, I apprehend the reigning winds of spring to be pe-

cularly fitted to produce catarrh, croup, and kindred disorders of the organs affected by the respired air. These north and north-east winds are not only cold, but extremely dry. By their dryness alone, they must act as powerful refrigerants on moist surfaces. For it is a fact well established by the chemists, that the conversion of moisture into vapour, greatly diminishes the warmth of the bodies from which the moisture is taken away. How very powerful the winds of spring are in producing this diminution of heat by means of evaporation, is proved by the following observations of the late accurate and ingenious Dr. James Hutton of Edinburgh. "I used to amuse myself in walking in the fields, by observing the temperature of the air with the thermometer, and trying its dryness by the evaporation of water. The method I pursued was this: I had a thermometer included within a glass tube hermetically sealed; this I held in a proper situation until it acquired the temperature of the atmosphere; and then I dipped it into a little water also cooled to the same temperature. I then exposed my thermometer with its glass-case thus wetted, to the evaporation of the atmosphere by holding the ball of the thermometer, or end of the tube, in which the ball was inclosed, towards

the current of the air; and I examined how much the evaporation from that glass tube cooled the ball of the thermometer which was included. During the summer season, in the driest weather that I could find, I never sunk the thermometer, in that manner, to the best of my remembrance, above two, three, or four degrees. But in a cold east wind in the spring, I once sunk it between nine and ten degrees. It was I believe about the month of March or April; the sky was cloudy above and no sunshine, and the wind was cold to the feeling, steady blowing, but not strong." Hence we perceive that the superior dryness of the air in March, makes moisture evaporate faster than the superior heat of summer air; and this is independently of all sunshine.

It is evident that the surfaces, along which the dry, cold air passes in breathing, must be affected in the same manner as the surface of the wetted glass tube; and these surfaces thus cooled, will be ready to be thrown into intense action by the rays of a powerful sun in a sheltered spot, or beside a brisk fire at home. An expedient, to be mentioned in the next section, will serve to diminish the bad effect of the coldness, and still more, that of the dryness of the spring air.

Into the cure of catarrh this is not the place for entering. It is a subject not sufficiently explored. But from a variety of scattered facts, there is cause to believe a catarrh very speedily curable, if proper remedies be employed as soon as it is formed.

CATARRH NOT INFLAMMATORY.

After frequent returns of catarrh, the disease generally appears in a form considerably different from its first. The variations, though well worthy of attention, have been little studied by medical observers. An attempt to describe them does not belong to my present plan. But it is important to observe, that they, frequently at least, end in a complaint known by the name of *chronic catarrh*, or the *catarrh of old age*. The first name they derive from their long continuation; the second from their more peculiarly affecting persons, advanced in years, or (what is in effect the same thing) of broken constitution. From repeated injury by catarrh, the mucous membrane degenerates from its original nature and functions. The same thing happens to all the membranous surfaces of the body from repeated inflammation. For then, instead of being merely kept moist by vessels

appropriated for this purpose, a superfluity more or less considerable is secreted, and finds an issue at some orifice, with more or less inconvenience to the person, labouring under this particular species of debility. Or if the excess of moisture be not continual, it will be occasioned by circumstances, not capable of producing any such effect in a healthy condition of the part. This is the case in the catarrh of debility. The different cavities along which the air passes in respiration, during the cold part of the year, pour out a quantity of troublesome phlegm, often as viscid as the white of an egg ; and the patient (particularly on exposure to a low temperature) is harrassed with violent and constant fits of coughing. Such a disease, in a climate like ours, must be the daily and nightly plague of existence for one half of the year. And it usually abridges or helps to abridge life.

It is with this class of individuals pretty much as with infants, who bring into the world a weakness of the mucous membranc. No sooner do they inhale a single breath of cold air th in their distresses commence. And frequently, indeed, on passing from the open air into an apartment somewhat warm, the most violent fits of loud, straining and convulsive cough will equally come on. The discharge of tough, ropy phlegm is accompanied by a struggle,

which persons, doomed to the severest handicraft labour, might pity. While an oppressive sense of fullness of the chest alternates with the cough and occasions almost as much distress.

With tractability and minute attention on the part of the sufferers, these evils may be frequently relieved by medicine and by the use of the cold or cool bath. But they can be relieved only on these conditions. The following are the principal circumstances in which tractability and care are so indispensably necessary.

Proper cloathing must be worn. The propriety of the use of flannel next the skin is a question not well determined by our medical writers. Worn in the day, it has always appeared to me useful in chronic catarrh, except in our settled hot weather.—I doubt whether it should ever be habitually worn by night. Bed-clothes can always be laid on in sufficient quantity to prevent chilliness. On which account flannel seems useless, and in that state of increased sensibility of the skin, which sleep induces, it is more likely to be hurtful than at any other time, by the stimulating effect of its piles, as also by the warmth it keeps collected round the body.

As far as I have been able to judge, this harassing malady is less frequent among labouring persons than among the idle. And yet when

it is once formed, many sorts of labour are carried on under circumstances that must have a tendency to increase it. But that general glow and activity of the skin and also of the mucous membrane, which is kept up by muscular exertion are probably more than sufficient to counteract the operation of those unfavourable circumstances. It would, therefore, deserve to be recommended to rich persons, afflicted with this species of catarrh, to submit to such a degree of manual labour as is consistent with their strength.

But the most essential thing of all is, unhappily, the most difficult, or, at least, that to which it requires the greatest share of self-denial to submit.—The open air must be avoided when it is of that temperature, which provokes violent coughing and discharge of phlegm; for thus the disease is increased. It may be true that in consequence of the mutual sympathy of different parts of the body, the warmth of the skin must have some tendency to diminish the susceptibility of the mucous membrane, yet this will not be a sufficient protection, when the cold is of any severity. And it is impossible to line the passages from the mouth and nose to the remotest ramifications of the wind-pipe.

There, however, is one most simple expedient which I have been lately accustomed to

recommend, and which certainly has allowed some invalids to range more at large with impunity. But I am not yet able to say whether it will answer in the most rigorous weather. It is merely an improvement upon the common practice of holding a handkerchief to the face on coming out of a hot room, and consists in a sufficient number of folds of gauze over the mouth and nose. The intention is not merely to warm the air, before it enters the respiratory passages, but likewise when the weather is dry as well as cold, to give it moisture. On looking into the accounts of those adventurers, who have at so much peril, and, in many cases, with so much damage to their constitution, lately climbed a variety of the most elevated mountains in Europe, I was much gratified to find the strongest indications of the efficacy of this measure. On the summits of very lofty mountains the atmosphere is known to be much drier as well as much colder than elsewhere. A short account of what travellers experience in those high regions will, in some measure, illustrate the manner in which a very dry, keen air acts upon living surfaces, when freely exposed to it, and clearly shew how very easily some of the most disagreeable effects may be avoided.

A letter of August 2, 1801, from Dr. Hoppe a physician, who dates at *Heiligenblut in the*

Upper Moellthale, contains some interesting medical observations, made upon the GROSS-GLOCKNER, one of the highest mountains in Europe. "The whole party, says he, who ascended to the summit, after a couple of hours were attacked with a superficial inflammation of the face. It was attended with considerable swelling and pain. The redness in some was more than in others. Nor did this attack disappear in less than two days, when the epidermis peeled off. An inflammation of the eyes was, in a few, more violent than any other symptom. In these the eye-lids were exceedingly swoln and turgid. The ball of the eye was also bloodshot. I myself could not go to sleep for pain of the eyes; but was obliged to get up and open my eyes. The rector of Drauthale however suffered most. He was not only unable to sleep, but spent the entire night in the open air trying to soothe his sufferings by pacing backwards and forwards. - - - Those of the party who had taken the precaution of guarding the face by crape, were perfectly exempt from these sufferings—a precaution to be recommended to every one who ascends snow mountains or glaciers. Here every body is acquainted with the effects above related; and the people who have to climb the Tauern

in spring, and are obliged to walk for several hours together over the fields of snow, guard themselves in a different manner. They make a mass out of earth and water, and besmear the face with it, which renders the same service as the black gauze."

Former travellers, and especially M. de Saussure, had accurately noticed these singular phenomena. But without excluding the dryness of the air*, and indeed in a sub-

* Un troisieme effet de l'air des hautes montagnes, est de rougir et souvent meme d'excorier les parties decouvertes de la peau, celles du visage principalement. Cet effet depend *en partie* de la vivacite de la lumiere; car il est plus sensible lorsque le soleil brille; et quand on parcourt des montagnes, couvertes de neiges et de glaces. *L'air y entre cependant pour quelque chose: Voyages* § 561, published in 1779. In § 2061 he states an opinion somewhat different. La consideration de la secheresse de l'air, plus grande sur les montagnes que dans les plaines, s'etoit bien presentee a mon esprit; mais je trouvois l'effet beaucoup plus grand que la cause: d'autant plus que l'on epreuve souvent cet effet sur les montagnes a un degre de l'hygrometre, auquel on ne l'eprouve point dans les plaines. --- Depuis que l'experience m'a appris que dans l'air rare des hautes montagnes la chaleur possede une force dessicative presque triple qu'elle a dans la plaine, j'ai compris que la chaleur animale, la chaleur interne de nos corps, agissant sur notre peau dans cet air rare, doit la reduire a un etat de secheresse extraordinaire. Et si les rayons du soleil directs ou reverberes par les neiges, viennent frapper cette peau dessechee et devenue par cela meme susceptible d'une plus

sequent explanation imputing the greatest part of the effect to the dryness of the skin, he lays a considerable stress upon the brightness of the light, which may have some, but probably no essential share in the phenomenon. And what share it has, I should ascribe to the heat of the face, occasioned by the light. And this heat, alternating or co-operating with the chills from the air, probably acts upon the skin as the same causes do in producing inflammatory catarrh. The words of Dr. Hoppe seem to imply that the people of the country, whenever they cross the cold snow-fields, are in the constant habit of besmearing the face, whether the weather be cloudy or bright. In our own dry winters, and particularly in a dry spring, every body finds that the skin is greatly affected, whether the day be dark or otherwise. I have often remarked the effect to be most considerable, when the sky has

grande chaleur, ces rayons exerceront sur elle une action beaucoup plus grande, et produiront la sensation de brulure, le hale, les gerçures, la bonfissure et les autres incommodites que l'on eprouve quand on ne couvre pas sa peau de maniere a la garantir, et de l'action du soleil et de cette excessive evaporation. *Ce meme dessechement produit aussi la grande alteration que l'on eprouve a ces hauteurs.* This last part was published in 1796.

been overcast, for then the east wind is most severe and parching. But what strikes me as particularly important in the relation of Dr. Hoppe, is the turgid, inflammatory, and bloodshot condition of the eye-lids and eye-balls when they were unprotected. Here we have mucous surfaces, sufficiently analogous to those along which the air passes in respiration. The very phenomena themselves, that are produced by a rigorous atmosphere when it traverses the wind-pipe and the whole extent of its numerous branches in persons subject to chronic catarrh, are here probably brought into view. Could the parts be inspected, we should observe a similar tumour, giving the sensation of fulness, and a similar redness from the effect of the cold air upon the circulation of the weak membrane; and must not the corresponding pain provoke violent fits of coughing? It is notorious that a discharge of mucus in greater or less profusion, always takes place from parts of this structure, in proportion as they have been more or less debilitated by previous causes. The difference therefore between wearing crape on our highest mountains, and exposing the face unguarded to the blasts, which those who scale them have to encounter, seems clearly to be an experiment for the direct benefit of in-

valids afflicted with chronic catarrh. I do not know whether all will be deterred by the dread of appearing singular from its application.—It is obvious that the construction of these *muzzles* ought to vary according to the case. Each individual will soon find how many folds of whatever material he may choose to employ, will communicate heat and moisture enough to the air he breathes, without injury to the freedom of respiration. Common veils will be generally insufficient; and they are not worn by men.

Persons, not considerably affected, need only wear such a guard on first going abroad, provided they are on foot, and the weather be not too sharp. Walking soon communicates to the mucous surfaces as well as to the skin a degree of activity, during which the functions of the chest are more easily and pleasantly performed; and in this situation a cool atmosphere received directly into the lungs will not produce inconvenience. Of course the muzzle may be discarded. It is obvious that the consumptive and the asthmatic will be enabled, by the same means, to indulge safely in air and exercise, at times when otherwise they must debar themselves the use of both.

In cases of chronic catarrh, it will be easily

understood that the bed-chamber should never be suffered to cool to that degree, at which the cough comes on. Fifty will probably be the lowest admissible temperature, and beyond sixty degrees it will seldom require to be raised.

ADVANCED YEARS.

As we approach to the term of second childhood, we require to be tended nearly with equal care, and to be cherished with more than equal warmth. During the coldest months there is regularly the greatest number of deaths among those aged above 60, and the fewest in the middle of summer, facts which do not appear from the bills of mortality to hold regularly of infants under two years (*Heberden's Observations*, Payne. p. 5152), though every nurse observes how much infants suffer in severe weather.

In a tract on consumptive and scrophulous complaints *, I have related a number of trials, in which invalids were kept for months in a temperature rather exceeding sixty de-

* *Observations on the Management of the Consumptive.* Longman and Rees.

grees. The result was the rescue of one person from the last stage of consumption *, and of more than one from the confirmed stage of that disease, when almost every variety of medicine had been tried in vain, beside unspeakable comfort where no cure was effected. In the course of these trials, I made observations, which emboldened me to promise sufferers from chronic catarrh compleat relief. Chronic rheumatism was also incidentally removed; and extension of a comfortable existence may undoubtedly be secured to the aged in the same way. I have shewn that these advantages lie compleatly within the reach of persons of very moderate fortune. Were the plan to be executed on a scale sufficiently large, nearly every enjoyment, of which the infirm are capable, might be brought within their reach. Should mankind ever cease to be content with slaughter, famine, and pestilence, as a recompense for their senseless admiration of political adventurers, and should the power of society ever be employed for the greatest good of the members, of which it consists, such a plan will certainly be carried into effect. Edifices, by their destina-

* Mrs. Finch, daughter to the celebrated Dr. Priestly.

tion putting to shame the monuments of ancient art, would rise under every inhospitable sky; and these CONSERVATORIES OF OLD AGE, scarcely subjecting their occupants to privation, would afford compleat shelter against the inclemencies and the dangers of the seasons.

END OF ESSAY V.

ESSAYS
ON
THE MEANS
OF
AVOIDING
HABITUAL SICKLINESS,
AND
PREMATURE MORTALITY.

ESSAY SIXTH.

Vol. II.

G

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Nullum ferè morborum chronicorum genus existit, quod
a scrofulosâ causâ ortum traxisse non observatum fuerit
aliquando.

There is scarce any species of chronic disease which has
not, one time or other, been observed to derive its origin
from a scrophulous cause.

E S S A Y
OF
S C R O P H U L A.

TWO CLASSES OF DANGEROUS COMPLAINTS.

THERE are various disorders which complete their course in a few days or in a few weeks. Of these some are accompanied by instantaneous disability, by violent commotions in the system, or by some other striking change. Hence they have been denominated *acute* by medical writers. It is but seldom indeed, when these disorders have once shewn themselves in their proper form, that there is any occasion to caution the patient, or those about him, against procrastination in seeking relief. When they rage in a number of families at the same time, an universal consternation pervades a city or a country. The municipal magistracy, if not the government itself, shall sometimes think it necessary to have recourse to public measures for preventing the progress of the danger. And if we advert to the conduct of the very individuals whose

supreme delight, at other times, consists in hurling defiance at the medical art, we shall observe that their tone is of all others the most changed, when they find themselves in the gripe of an *acute* malady. There are none who more piteously invoke the aid of physicians, or more timorously obey their injunctions.

Disorders which follow an opposite progress are distinguished by the title of *chronic*. They are, doubtless, often equally formidable with those of the former class, whether we consider their issue, or certain periods of their progress. But when unattended at their commencement with severe pain or alarming reduction of the animal powers, (which is the case with some, most eminently deserving to be styled *chronic*), they excite no active interest in society at large. The persons affected, and those about them, remain insensible to their situation. Hence they are often suffered to run on to a dangerous or an irremediable length. And full security, or at most slight suspicion, is at once succeeded by despair. Though sometimes the security and the despair of the nearest relations of chronic invalids are separated by an interval of incredulity, than which nothing is apt more strongly to excite the indignation or the pity of the medical practitioner,

according to the habitual or momentary state of his temper.

From the bills of mortality and the records of medicine, it is manifest that complaints of slow progress occasion as much destruction as those of an opposite nature. And if this be true, it will follow that they must, upon the whole, occasion much more distress. Hence it becomes the duty of writers on preventive medicine, to treat of the more formidable chronic disorders with particular care. There is nothing capable of effectually banishing false security, but a knowledge of the connection between first slight appearances, and the secret operations of fatal causes. A conviction of the understanding, produced by a knowledge of the whole course of slow disorders, will supply the want of that, which in more urgent cases presses upon sense and feeling with irresistible force, and urges all parties to grasp with eagerness at every kind of assistance.

PUBLIC IMPRESSION.

It is not that scrophula is a sound indifferent to the public ear. But the most important truth, however fully acknowledged, must continue as useless as if it were totally

unknown, unless it be particularly applied. We daily hear our divines reproaching us with this species of neglect. Every human individual, they say, is apt to act and speak as if he thought every other subject to disease and death, but scarce ever speculates upon his own insecurity. In like manner, we find the whole world, lamenting the frequency of scrophula in this country. Its inveteracy and the variety of forms, in which it shews itself, are mentioned with terror. It is declared sometimes to make the vital organs its prey; and sometimes, with greater malignity in its method of attack, to derange the functions of the brain, and to bereave those, to whom it has descended, of their reason. To put a total stop to such calamities, the most humane persons profess themselves disposed to severe coercive measures. Nor is it uncommon to hear a law, prohibiting the scrophulous from marrying, proposed by those upon whose constitution or upon whose family the disorder is at the very instant committing unperceived ravages.

It is indeed undeniable that scrophula is exceedingly common in Great Britain. It is equally true that nothing can be imagined more disgusting to behold, or more miserable to endure, than the effects it sometimes pro-

duces. The object, however, begins to have a less gloomy side. For there are few diseases in which the triumph of art has been rendered more compleat. In its worst form, scrophula is to be removed by means, from which not the smallest collateral injury results. In general, its entire eradication from the habit is attended with little difficulty. I need scarce explain the conditions under which I make these declarations. It will be self-evident that there must be means and disposition for a proper course of regimen and medicines. The patient must not be just at the point of death; and the destruction or disorganization of certain vital parts must not have proceeded beyond a given degree; though in parts of too little importance to deserve to be termed *vital*, it is wonderful what damage can be repaired by proper remedies. Indeed, it is scarce in any instance possible, that this complaint should proceed to its incurable stage without extreme penury, gross neglect, or prejudice on the one hand, or unpardonable deficiency of skill on the other. The latter of these causes does not belong to my undertaking. But to obviate the mischiefs of penury and neglect, I think it necessary not only to treat singly of the appearances which scro-

phula usually puts on, but also to give the character of the temperaments which it most readily invades, and to consider some opinions which very commonly prevail, and which I look upon as so many dangerous errors—Those who take up the present essay for the mere amusement of a vacant hour, will probably find me more than usually tedious. But numbers must feel a desire for the fullest information of which they are capable; and these will be better enabled to support a degree of minuteness by the prospect of the advantages, which I have given them to understand they may draw from it.

FIRST RUDE NOTION OF SCROPHULA.

The term scrophula is derived from the Latin word *scrofa*, which signifies a sow. The appearances, whatever they were, that gave rise to this denomination, occasioned the Greeks to follow the same analogy in their denomination: *χοιρας* being used both for the animal and the complaint. Various explanations, as is usual in such cases, are brought forward. According to some, the name was adopted because swine are liable

to certain tumours, resembling those in scrophula, though the resemblance extends not farther than form, it having been discovered a few years ago that the *measles* in the hog race are produced by a species of taenia.—According to another derivation, the human neck is said to acquire from scrophulous tumours a degree of that grossness which that of the hog has from nature. Again, the great numbers, in which these tumours are often seen, is childishly supposed to bring to mind the number of young produced by a sow at one litter.

All these etymologies are founded upon the existence of external, and therefore tangible swellings; and to this we generally find that the notion of the disorder is limited among the unprofessional. But this is much too narrow an idea. It is true, and it is essential to understand, that the enlargement of a particular class of glands, called *lymphatic glands*, is one of the earliest and most frequent phenomena exhibited by the complaint. These glands are those which most nearly resemble the acorn, when cut of its cup or calyx, from which glands universally derive their appellation. The lymphatic glands are largely distributed through the interior and over the surface of the body.

But as long as they remain in a healthy state, the most superficial do not present any thing elevated, knotty, or rough to the sight or the touch. But as soon as they become affected by scrophula, they immediately enlarge and become very sensible on pressure. At first, they are rather soft, and in some degree elastic. In process of time they grow harder, and swell in knots or clusters, till the formation of *matter* within them restores their softness. Their bulk varies from the size of a pea to that of a kidney-bean and hazle nut. They enlarge to the magnitude of a pigeon's egg, rarely to that of a pullet's. For though glandular lymphatic swellings often attain the size of a goose's egg, particularly under the arm-pit or in the groin, this happens from the enlargement of a whole cluster, and seldom of a single gland. And as to those large swellings which precede the disfiguring scars in the front of the neck under the chin, they take place in glands of a different description, when the habit is more seriously infected by scrophula.

One of the slightest of scrophulous affections, viz. when the swoln glands take the name of *growing kernels*, will give the best idea of the incipient stage of this complaint. Whoever examines this very common ap-

pearance, will find the single tumours moveable, soft, indolent or without pain, and producing no discoloration of the skin. In this state they will remain for a long time, even for a number of years. Afterwards they either disappear from accidental increase of robustness, or enlarge, coalesce with the contiguous skin or *common integuments*, become immoveable, occasion the skin to change from a pale to dark red hue, and give pain; all which circumstances denote progressive inflammation.

Even where they do not give pain on being handled, but are thick set, and somewhat enlarged about the neck, they produce a disagreeable sense of tension, when the head is turned round.

But it is to be observed that all tumours and indurations of the lymphatic glands, are by no means referable to the head of scrophula. I have seen the lymphatic glands of the groin enlarged from a seton in the side, and from an abscess in the buttock. The same thing is well known to happen from the venereal poison. A cancerous tumour will be attended with the same effect. And a temporary enlargement of the lymphatic glands near the inflamed parts, will often accompany catarrh, and, not very unfrequently, a bad tooth. In these, and other

instances, the occasion is so evident, and the origin of the affection of the lymphatic glands so sensible, that there can be little danger of mistake. However, to enable those who have the charge of young persons, (for it is they who are peculiarly susceptible of scrophulous complaints), to judge when the habit may require correction from regimen or drugs, it will be necessary to enter more minutely into particulars.

SCROPHULOUS CONSTITUTION.

The great attention which the physicians of modern times, and particularly those of this country, have been called upon to pay to scrophula, has enabled them to fix, with tolerable precision, upon certain signs, indicating the habit most susceptible of this disease. It is particularly important that the public should be well acquainted with these signs, in order that a preventive regimen may be followed from the beginning, and that recourse may be had to proper remedies, where regimen alone proves insufficient, and the disease seems gaining ground.

The quality of the skin, and particularly that of the complexion, is one of the leading indications. The skin is fine and sleek; the

complexion bright and ruddy. It is often such as, from first appearances, a mother would most desire for a daughter; and an unwary spectator consider as a mark of the most perfect health. This is so frequently the case, that some of those authors who have laboured so much in vain to give *definitions* of diseases, similar to those which occur in books of botanical nomenclature, have made a *fine complexion*, part of the character of scrophula. This part of the character is not merely objectionable, because the disease does not take place in all who have the assigned complexion. For causes to be mentioned hereafter will much more certainly occasion it, where this kind of complexion exists; and if a parent with such a complexion escapes, the progeny is often observed to become scrophulous.—The principal objection against this part of the definition is, that subjects as far as can be ascertained originally pale and sallow, are very often affected by scrophula in some of its worst forms.

Nevertheless, as great stress deserves to be laid upon this, as upon most single indications. There are many readers, to whom I hope I need not explain, that *beauty* is a thing perfectly arbitrary or conventional.

There is no possible cast of features or colour of complexion, to which persons of different age, country, and education, will not apply the epithets both *ugly* and *handsome*. It is true that when associations are more strongly formed, they cannot without much effort of the mind be broken even in persons of reflection, nor broken at all in those who do not reflect. One generation goes on to think and feel, as they have been taught by the preceding. In some points respecting the human person and countenance, we are at this day the disciples of Zeuxis and Praxiteles; the opinions, by whatever causes established in Greece, having descended to us by regular affiliation. But it seems far from impossible to alter these associations. It may indeed be effected by any individual of penetration and address, under whose eye the notions of young people are formed. And who has meditated upon the sources of good and evil in the world, profoundly enough to be able to conceive how much the sum of human happiness and virtue would be enlarged, *if the standard of health were rendered the standard of beauty also?* Towards this indeed every step, made by society at large in the knowledge of animal nature, must inevitably be an advance.

In many novels we meet with a whole exhibition of portraits. The favourite figures however must excite pity or aversion, instead of admiration, in every reader who happens to have a little the advantage over his author in point of information concerning the properties of the human frame.

Were an artist, after the fashion of antiquity, to select the most characteristic circumstances from a number of patients affected with the glandular variety of the complaint under consideration, he might compound a countenance, which the undiscerning should admire exceedingly, both for feature and complexion. It would certainly not fall short of the most perfect ideal beauty of a novelist, and exhibit every trait of the heroine, so far as the description of her charms has any thing in nature corresponding to it. The painting might be so framed, that the face only should in general be visible. But while it was under inspection, it might be contrived that the touch of a spring should bring into view the neck and one of the arms, crossed before the body, in which, with the strictest adherence to nature, might appear various tumours, some suppurating, some discharging matter, and others having left indelible scars, and for the present sur-

rounded by an extensive area of a disagreeable dark red. Such a design might be called a *nimum-ne-crede-colori*, or *look-more-than-skin-deep*. If, on the first impression, it feel cruel to call up such images before the public eye, I hope, on second thoughts, that it will be allowed at least cruel kindness. I would appeal to any one, unfortunately in a condition to sit for such a picture, whether there is most cruelty on the part of those, who would hinder him by law from forming the most endearing of ties, or on the part of one, who gives warning, calculated for preventing the impediment from occurring; and who, if the tie have been formed, would fain persuade the party afflicted to adopt the measures, necessary for preventing the taint from being transmitted to other generations.—Sir Thomas More, by the example of his ideal commonwealth, recommends a previous personal search, lest the discovery of blemishes after marriage should create disgust. It would be better to take care betimes that certain blemishes should not arise before or after this change of state.

When the temperament verges in the smallest degree towards the formation of the actual disease, the face appears fuller or somewhat bloated. This appearance is more

observable in some parts of the face than in others. It shews itself in the cheeks, and between the cheeks and ears. Both eye-lids are puffed, particularly the lower. The nose looks thicker than usual. But more remarkable and more constant than any of these indications, is the enlargement of the upper lip, which often reaches to the partition between the nostrils, and to the *wings* of the nose. The natural depression in the middle of the upper lip becomes now much more conspicuous. Many authors look upon this enlargement of the upper lip as the most certain single mark of a scrophulous tendency. It is true that it is not always present, particularly in grown persons, where the disease is characterized by a concurrence of other undoubted symptoms. It is true also that many individuals and families, entirely free from all taint of this nature, have a tumid and prominent upper lip. But these cases may be generally distinguished by the constancy and original existence of the peculiarity. In the scrophulous, it will be remembered not to have existed, and it will generally fluctuate in size from time to time.—One thing too must carefully be held in mind during the perusal of this and the subsequent tracts. In the present general defi-

ciency of preparatory knowledge, no writer in his senses will think of enabling the unprofessional to distinguish diseases with certainty. It is sufficient to make it clearly understood when there is room for apprehension. Practitioners of medicine, as well as judges and juries, must often proceed upon circumstantial evidence. When the symptoms are of dangerous tendency, when the disorder they portend has infested the family, or is even endemial in the country, when nature is likely to do nothing for the patient, and when the physician is satisfied that he can conduct the treatment without injury, he ought to resort to the most probable remedies without scruple. Men must frequently act on other momentous occasions with the chances less in their favour.

This enlargement of the upper lip, of which I am speaking, is vulgarly considered too as a sign of worms. But nothing is more likely than for worms and the complaint in question to co-exist. Parents are always falling into mischievous errors upon the subject of worms. Worms very often infest children weakened by different maladies. When they are detected, they are considered as the prime or the sole object of regard. Domestic or advertised medicines, often of the most

hazardous quality, are administered. These impair the constitution; or if they expel the worms without injury, the administrator of the remedy sits down content, and the main complaint goes on daily increasing, and infallibly avenges the neglect at some future period.

But not only does the upper lip become enlarged. The nostrils sometimes itch, grow excoriated and ulcerate, or are covered with a thick coating of crusts or scabs. This arises from a too copious discharge of mucus, the membrane, by which it is secreted, being very apt to be weak, or *relaxed* as it is termed, in constitutions of this nature.

Of the complexion, it still remains to be observed, that even in the class of scrophulous subjects, who have cheeks ever so florid, the enlarged upper lip, the nose, and the circumjacent skin are of a dead, pale, and unwholesome hue; by which contrast those who are accustomed to medical physiognomy will often recognize the complaint at first glance, and it ought to give others suspicion, if they will but avail themselves of their senses, and beware of a cheek like rouge, with a muzzle like white lead.

Before any positive symptoms of disease exist, and especially when the complexion is bright, the eyes are large, lucid, and such

as to be esteemed highly beautiful. At this period too, the pupil is unusually dilated. In infants of the soundest habit, the pupil is larger than in adults, but on comparing such as from other circumstances appear to have a disposition to scrophula, the appearance will be found much more distinct, and to give the eye a darkness in the centre, which by the uninformed is esteemed as contributing to beauty. But from a variety of considerations, there is no doubt but it betokens constitutional debility, wherever it is habitual. Indeed when only occasional, it accompanies those states, in which the system is most remarkably deprived of its vigour. It is seen in fainting, in low fever, and in the weaknesses brought on by the most hurtful excesses of youth. No wonder that the fibres of the iris should lose their tone, in common with the rest of the living fibres.

A light, grey or blue eye, has been enumerated among the marks of scrophula. It certainly often occurs, as well as light hair, in this temperament. Those however who have wide opportunities of observation, will find that the other tokens frequently concur with black hair and black eyes.

The general appearance of the skin—(and not merely that of the face)—as also of

those veins which run along the surface of the body, is particularly worthy of regard, insomuch that this one indication, where it shews itself in young people, with general feebleness or indisposition to exercise, ought to put their friends upon their guard. The skin is conspicuous for the superior smoothness and fineness of its texture. It exhibits appearances that give the idea of transparency. These are owing to the full, fine blue of the veins. In patients far advanced in scrophulous disorders, those vessels have actually looked to me as if filled with ink. And besides their colour, they are unusually turgid.

The older medical writers have laid great stress upon shortness of the neck, as well as on the shortness and narrowness of the forehead, the flatness of the temples, and the depth of the jaw-bones. But the very contrary to some of these circumstances for the most part obtains; as, for instance, in regard to the neck. The depth of the jaw is also produced by the actual existence of the disease, as manifested in the enlargement of the subjacent glands. The same is the case with regard to the neck, where the lymphatic, and the other glands come to be swelled. Now as the lower parts of the face

are dilated in size, the whole proportion of the features must evidently alter, and the forehead of course will look narrower and lower.

It is undoubted however that in the scrophulous temperament, the whole head, particularly its hinder part, does attain a larger size. This happens particularly to those who have been rickety in infancy. For between the one disease and the other, there exists probably no difference, except in the time of life, and the parts attacked. We well know that one of the most important early processes in the constitution, is to form the compound (perfectly understood by modern chemists, as being formed of lime and acids *) from which the bones derive their hardness. In many scrophulous constitutions this process is carried on too sluggishly, and the bones swell and become crooked in

* I have found by experiments made at the pneumatic institution, that when growing animals are put to breathe a larger portion of oxygen air, their bones are rendered wonderfully solid, and their growth checked—a fact, immediately applicable to certain scrophulous invalids, where the growth is too rapid. I mention the circumstance here out of place, lest the publication of the experiments should be delayed longer than could be wished, by engravings, intended for their illustration.

consequence. It is common to find those who have been rickety at one period, afflicted afterwards with the *evil*. And the children of mothers who have been rickety, will very frequently turn out scrophulous, without any disposition to that disease on the part of the father, and without the operation of any particularly unfavourable cause on the offspring. And in some families, part of the children shall be rickety and part scrophulous, so that not one among a great number of brothers and sisters, shall escape the one complaint or the other.

The intellectual superiority of children of the scrophulous temperament has long been noticed, and it is certainly found to exist in a large proportion of cases. That sensibility or openness to impression, which is one of the principal constituents of genius, has often been observed to accompany different diseases of debility. The compleat distinction of circumstances, and ascertainment of causes is one of the remotest benefits, to be expected from the knowledge of the human mind, when that shall attain the point of perfection, for which the labours of Hobbes, Hartley, Locke, and Abraham Tucker have prepared the way.

In some cases of scrophula, however, when

the disease has made considerable progress, the effect is entirely opposite. For there is a form of scrophula, in which the intellectual and other functions are equally impaired. Such cases almost universally belong to the class, marked by a symptom easy to be distinguished, and of which the very first appearance should be the signal for seeking instruction how to arrest the progress of the whole complaint, and for persevering not only till so much of it, as has actually taken place, shall be removed, but till the constitution has lost its scrophulous tendency. The symptom to which I allude is an enlargement and a hardness of the belly, especially towards evening. In the infants and young children of the poor, and in those who are ill-fed and generally ill-managed, this enlargement and hardness of the belly passes by gradations more or less quick into perfect atrophy. The character of the countenance here often differs totally from that, which is usually described as denoting the scrophulous temperament. The face is indeed bloated, and that in a still greater degree, but it is of a uniform sallow. The eyes are dead, and disposed to weep. The little invalids are heavy, peevish, gloomy, and without relish for the usual sports of their age. They have fre-

quently that superiority of the understanding which belongs to the other variety of the disease. But in place of being lively, they are considerate beyond their years. So that, in pursuance of a language long adopted in medicine, the one may be called *sanguineous*, the other *phlegmatic* scrophula. When the symptoms are suffered to increase, and when the disease bears upon the mental faculties, not only the face, but the body and limbs are apt to be universally bloated. The hands and feet are habitually cold, and assume a purple hue. The bowels are so sluggish, that opening medicines are almost always necessary, and these to produce their effect must be of the sharpest kind. Every thing, in short, conspires to indicate torpor of body and mind. If there be any enlarged lymphatic or other glands about the neck and throat, (and this symptom is frequently absent), they partake of the predominating quality of the whole system. They are almost sure to be without pain. They enlarge slowly, or not at all, after once becoming perceptible; and, of course, it is exceedingly unusual for them to gather and break. That rickety tendency, which is denoted by a head of unusual size, and by

large joints, is often seen in this species or variety of scrophula.

Opulent parents will never suffer such a complaint as this, to arise to a certain height unchecked. But it is here that they deceive themselves; and, after measures of small avail sit down content, while the disorder only changes its seat and form. The enlargement of the belly, and perhaps also of the upper lip, are considered as implying the presence of worms. Recourse is accordingly had to some standing family composition against these animals, or to the pill and lozenge most recently announced in the newspapers, under the sanction of reverend and titled names—Worms are expelled. The pill or lozenge, if it contain mercury, as it frequently will be found to do, may diminish for a time the scrophulous affection of the glands lodged in the belly. And the consequence of this may be, to favour the eruption of the disorder elsewhere. At least, it is commonly enough to be remarked that children, early affected with enlargement of the belly, and with the usual concomitant symptoms, are seized in the course of two or three years in more superficial parts, if by accident or design the first complaint

should be lessened or removed, but no sufficient means adopted for clearing the constitution entirely.

*SCROPHULOUS ATROPHY OF THE
CHILDREN OF THE POOR, MORE
PARTICULARLY CONSIDERED.*

We have many proprietors of extensive estates, and of large manufactories, who interest themselves not only about the comfort, but about the health of their labourers, and of their labourers' families. In a time of sickness, these proprietors not only give away money and costly liquors to a considerable amount, but (what bespeaks infinitely more charity of heart), they do not grudge time and attendance. The gentlemen sometimes, and sometimes the ladies, regularly distribute remedies to a crowd of needy applicants. Their excellent intentions would however be crowned with far greater success, and by the same expence and trouble they would relieve a much more considerable number of objects, if they made it their aim to prevent, instead of curing, or even employing medical practitioners to cure, the disorders of their inferiors. And by this change of plan they would escape many of those disagreeable

feelings that at present they owe to their kind offices. It will be sufficient, in the first place, that they make themselves acquainted with the marks of the most common chronic disorders, and afterwards that they inspect the families of the poor from time to time, with a view to the state of their health. It is by no means incumbent upon the superiors to ascertain the particular ailment with the accuracy, which ought always to precede the administration of remedies. A little practice and information will soon enable them to distinguish, among the various drooping human creatures that will catch their attention, such as a very moderate quantity of drugs, seasonably employed, will snatch from a miserable death, though they would not have the smallest chance of relief from the bounty of nature. The success of a mode of charity, so extensive and yet so prudently restricted, would create a new interest in life; and to the satisfaction of loading the memory of Howard with benedictions, would be added one much more solid, that of following this example.—When the opulent have not leisure or inclination, or do not suppose themselves qualified, to act as inspectors of those who stand to them in some subordinate relation, how easy to

employ a professional deputy ! This would not only be serving the indigent invalids in their neighbourhood. It would be also promoting the most useful part of medical science. Nothing is so much wanting as incentives to study the prognostics of slow diseases, and the means of prevention. Providence, for some inscrutable reason, in former ages almost always saw it fitting to disjoin wealth, and the inclination to use wealth to the best purposes. The means and the inclination we now frequently see united. But the knowledge is still for the most part wanting !

No portion of the afflicted poor would profit more by such a system of beneficence than the scrophulous. The peculiar *waste* or *atrophy* occasioned by this disease, when it affects the *mesenteric* glands, is not indeed by any means confined to the abodes of poverty. But it is infinitely more frequent there than elsewhere. And in consequence of the supineness, the ignorance, and the distress of the parents, it often proves fatal, though in all but its extreme stage, it is perfectly curable. No complaint bears more distinct characters. A very brief description of it, in addition to what has been said in the former part of this essay, will enable those who are willing to exert themselves in behalf

of their helpless neighbours or dependants, to recognize it with the utmost certainty.

The belly of scrophulous young persons is almost always inclined to protuberance. But when that affection of the glands, lodged within the belly, or of the mesenteric glands, by which the protuberance is caused, has proceeded to the length of atrophy, this appearance becomes peculiarly striking. And not only a fulness, but a hardness will be felt about the navel. Sometimes, and at a certain period, hard inequalities will be sensible to the touch. The little sufferers (for it is always found to affect young children principally), will hardly be so stupid as not to have noticed those sensations, which in most cases are present, and which, where they are, will materially assist the judgment. One of these sensations is a weight about or below the navel. Another is frequent griping pain. There will exist an interior disorder, corresponding to the exterior. Sometimes it will be aversion to food; at others, an insatiable appetite, or the desire of gross, farinaceous aliment, or of substances not fit to be used as articles of diet. The bowels will seldom be regular; often too open; now and then, the contrary. The evacuations will have an unhealthy look, from being

charged with slime or from being too light of colour, because the liver does not secrete bile of a proper tinging quality. The advance of the complaint (and occasionally its more early stage), is accompanied by a very offensive purging.

The emaciation of the limbs will form a most disfiguring contrast with the enlargement of the belly. The skin will be found to hang loose, and sometimes, if doubled, to go almost round the member to which it belongs. It will also be of a dingy or dark colour. The complexion of course will be of a sallow or deadly pale, except when the hectic flush prints its deceitful and ill-omened animation on the cheek.

The fever will soon declare itself by other signals. A general indisposition and lassitude will come on, especially in the evening. Shiverings will be felt; and to these an universal dry heat will succeed, with a degree of general or partial moisture in the course of the night.

AFFECTION OF THE EYES.

With the complexional signs of scrophula, we shall often find conjoined a weeping and weakness, with inflammation of the eyes. If

the lower eye-lid be turned down so that the interior surface shall come into view, it will appear more red than in the healthy; and vessels will be manifest, turgid with blood, on the white part of the eye-ball. This sort of inflammation is peculiarly conspicuous after waking in the morning. Frequently white spots will be found to occupy the transparent part of the cornea. These give alarm at first. But as they generally disappear altogether after a time, or speedily shift their situation, they are overlooked or forgotten by uninformed parents. Nor is it uncommon for short-sighted medical practitioners to tranquillize them by an assurance that *this is a thing which the child will not fail to overgrow*. It is indeed but seldom that these opaque spots deprive children of sight. But other scrophulous complaints supervene; and unless the party affected has the uncommon good fortune to be thrown into a way of life, highly favourable to a delicate constitution, he will either be disfigured, mutilated, or destroyed, between childhood and maturity. This disorder of the eyes rarely occurs alone. When attended, as it usually is, by general weakness, the most unremitting endeavours should be used, for years together if necessary, to remove both the

one and the other. If by chance there should be discovered, on examination, no want of general strength at the moment, it will be highly necessary to keep a sharp look-out for those more serious symptoms, which will hardly fail to break forth in due course of time.

CHILBLAINS.

Those who have opportunities of inspecting numerous troops of English children, will easily remark that the most scrophulous by habit and by descent, are most troubled with chilblains. In Scotland, where a different mode of dress in early life inures the feet to the vicissitudes of heat and cold, chilblains, I believe, are infinitely less known: and in Scotland of course, scrophulous ailments attack less hardy parts.

It is very commonly observed, that those who have chilblains when young, are after their disappearance destroyed by some complaint of the scrophulous class. Hence it is concluded that the cause producing chilblains has migrated from the feet (and it may be from the hands,) to some nobler organ, and that if the chilblains had continued to break out as before, no disorder more serious

would have occurred. This opinion must be allowed to have some semblance of truth. But even in speculation, as thus generally enuntiated, it is, I apprehend, incorrect; and, in its influence on practice, it is probably as mischievous as the most arrant falsehood. Of many disorders it is unquestionable that while they are in force in one part, they do not invade any other. As long, for example, as the gouty inflammation keeps up in the ball of the great toe, the stomach will be safe. But again, it should be considered that as long as the morbid habit continues, vital organs must be liable to seizure. And by a slight change in his mode of life, the patient may unwittingly occasion the retrocession of the disease. Independently of any such change, and in spite of the most scrupulous care, the progressive developement or the unavoidable decay of the system may give rise to the same disaster.

In regard to chilblains, it is obvious that their occasional causes, merely in consequence of our usages, will operate with less force and frequency after the period of puberty. The feet and hands of men and women are not chilled in the same cruel manner, as we have found those of boys and girls to be. But it is not unlikely that natural and neces-

sary alterations in the constitution would frequently call the scrophulous action from the extremities to the centre of the machine, even though the utmost pains were taken to secure an annual crop of chilblains. It is common enough to see a local scrophulous affection, far more severe than chilblains, superseded by others still more violent. In the lymphatic glands about the neck, it usually happens that as one dries up, another suppurates. When even ulcers affect the bones of the fingers, they shall heal, if that kind of seizure of the spine come on, which is followed by distortion. In a patient where I certainly knew that the salivary glands were diseased, because I could feel them and because there was present every mark of the scrophulous temperament, and where the strongest evidence existed of disease in the mesenteric glands also, I have seen the morbid action pass almost as suddenly from the neck to the belly, and from the belly to the neck, as it ever does from limb to limb in gout. When the belly became turgid, tense, and painful, the salivary glands sensibly subsided and grew easy, and *vice versâ*. These changes took place repeatedly in the space of a single day.

The true policy, therefore, is plainly still

the same. If we would avoid sudden death from gouty seizures in the stomach, let us use such medicines and pursue such a regimen as will clear the constitution, and prevent this terrible disease from taking possession either of the centre, or of the extremities. If we would avoid slow death from the destruction of vital organs, let us put an end to chilblains by agents that will produce a general improvement of the habit; and not absurdly lament that our heels cease to inflame and chap. For how should it be otherwise, when they are no longer affected by the proper causes of chilblains, considerable inequalities of temperature?

OBSERVATION TO PREVENT MIS- CONSTRUCTION.

It is proper that one thing should be clearly understood concerning several of the indications of scrophula. They have no necessary and general, but only a local and accidental connection with this disease. In a different climate, all, except the slow tumours of the glands, would betoken a tendency to complaints of a nature altogether different. And as to the tumours of glands, even though they should never advance

beyond the state of *growing kernels*, they ought in strictness to be regarded as real scrophula. Thus in the West Indies, for example, enlargement of the pupil of the eye; and distension of the superficial veins would not, in one instance in twenty, be followed by any of those disorders, which in this country we consider as scrophulous, but by feebleness of the digestive organs, or by a state of excessive general languor. These signs therefore in reality do but indicate constitutional debility. And it is owing to the nature of our climate, to our diet, to propensities transmitted from parent to child, or to some other unexplored causes, that scrophula so frequently attacks people distinguished by these particularities. It is nevertheless obvious that an acquaintance with them is nearly as useful as if they were absolutely specific in their import.

The general reader will be at no loss to perceive how preposterously certain authors have judged in restricting some of these signs to a particular ailment. Thus, for example, a professor in an university, celebrated as a medical school, insists upon it that a puffing of the wings of the nose, of the upper lip, and of the parts adjacent, is to be considered as an infallible token of

worms *. But neither this puffing, nor the dilatation of the pupil, have any fixed inseparable connection with the state of other parts. They are properly affections of the parts themselves. They may originate in local causes, and be quite confined to the spot. They may also be associated with an unhealthy condition of a distant organ. The proof is easy. The one or the other can be produced at pleasure by art. The dilatation of the pupil by introducing the preparation of a narcotic plant into the eye: the puffing, by cold applications to the features in question.

That the marks of the scrophulous temperament, as distinguished from the early and slight, but positive symptoms of the disease itself, are merely signs of general or local debility, is rendered more than probable by another fact. Women are more liable to this complaint than men. In childhood the evil appears to be pretty equally distributed between the sexes. But as they grow up, every circumstance in the mode of life, and all the differences in the bodily functions, are unfavourable to females. For

* Dr. Home's Clinical Experiments, § xx.

one boy we find at least four, and perhaps six girls, labouring under some scrophulous complaints, as distortion or curvature of the spine; and in no instance is the proportion reversed.

OF SOME OF THE GRAVER SCROPHULOUS COMPLAINTS.

These are foul ulcers from suppurated and broken glands, scrophulous consumption, complaints of various name about the bones, and particularly the joints, as *spina ventosa*, water on the brain, disease of the hip joint, lumbar or psoas abscess, white swelling, impaired vision or blindness, ear-ache, discharge of matter from the ear, and deafness. Indeed these affections of the ear have as good a right as most of the other circumstances enumerated above, to be considered as admonitions to guard against more serious attacks of scrophula hereafter.

Glandular ulcers are the most easy to be foreseen: at least where the external glands are concerned. The swelling in this case gives timely and sufficient notice.

Of consumption I shall treat in the subsequent essay.

Spina ventosa, or the windy thorn, is an

absurd Arabian denomination. The epithet *windy*, or *puffy*, is deduced from the aspect of the bony tumour, as if it were inflated with air; and to account for the other term, the pain is said to be sometimes such as would arise from a thorn, lodged within the diseased part. Modern authors have called the complaint *Pædarthrocæ*, or the *child's joint-disease*. Whatever be the most appropriate name, the scrophulous affection of the bone varies as much in its progress as that of the glands. Sometimes there shall be no pain, but only a swelling, for years before the skin is broken and a running ulcer formed. In more rapid cases, the patient shall be sensible of an indistinct feeling in the part, which shall exhibit no preternatural appearance, nor give any pain on pressure. After some time however a tumour shall arise, and in the course of a few weeks a redness be evident. By degrees the red shall change to a livid hue. At last it shall break, and discharge a thin, wheyish, or ruddy liquid. The ulcer on examination is found to reach to the bone; and this proves rugged, unequal, and spongy on its surface. The different variations of this complaint are observed to affect the larger and smaller bones alike; the joints of the shoulder,

thigh, and wrist, as well as those of the fingers and toes.

Water on the brain, or enlarged head; is one of the most palpable of diseases, often affecting children before birth, and indeed extinguishing life in the womb. It will probably disappear altogether, or in great measure, as soon as the scrophulous part of the public shall have knowledge and good sense enough to take the proper measures for cleansing the constitution of this taint. There are some families where the hope of progeny is continually defeated by this and other kindred diseases, the children being either still-born, or regularly perishing about a given age. In these cases, much may be expected from proper preventive measures applied to all parties. If the fault be on the side of the mother, she might pursue a course of scrophulous remedies during pregnancy, and of these, she would find the most effectual not only safe during that period, but beneficial for the future. The children should be put upon a regimen, suggested by a true knowledge of the animal œconomy, and not taken up on the faith of books on the disorders of infants; of which the authors, in spite of all their experience, too often partake of that scantiness of ideas, and that

impotence of combination, which is implied in the phrase—*Such a person is no better than an old woman.*

Swellings from inflammation usually become red in a short time. But we have seen that it is otherwise in glandular swellings from the king's evil. It is also long before the scrophulous swellings of the joints grow discoloured. Hence a particular variety has been called *white swelling*, or *fungus of the joints*. This disorder attacks the larger joints in preference. The term is indeed almost confined to the knee. The tumours it causes are often soft at first and elastic, yielding to pressure, but not pitting. The pain, for the most part, is excessive at the onset; though sometimes the usual indolent character of the scrophulous class of tumours prevails here. The pain, however, when it does exist, is generally very circumscribed—it is sometimes unremitting, sometimes periodical: even when most excruciating, it is scarcely attended at first by any perceptible swelling. It encreases upon the slightest motion; and the patient being obliged to keep his limb in the same posture, in no long time loses the use of the joint. In the natural course of the malady, the distress lessens as the joint enlarges. And soon an increase of the ends

of the bone is perceptible. The soft parts partaking of the disease, the tumour grows more elastic, smooth, and shining, and by degrees acquires somewhat of a red huc. The disorganization advances; abscesses form with variety of fistulas and sinuses. These break at last, and discharge the ill-conditioned, wheyish, and curdy matter, peculiar to scrophulous sores. The first ulcers will occasionally heal, but new ones do not fail to succeed. A decay or caries of the bone is easily detected at the bottom of the ulcer, and long splinters or exfoliations run out along with the matter. Hectic fever is formed. Of course the patient falls away, and at last perishes amid those sufferings, which diseases accompanied by hectic fever always induce. This is, it should be remembered, an excessively meagre representation of the natural course and termination of white swelling. Means heretofore in use undoubtedly sometimes arrest the complaint. But if it be suffered to proceed to a certain length, the precarious measure of amputation has been considered as the only resource.

In lumbar or psoas abscess a slow, indistinct and often unperceived inflammation arises in the inside of the spine and ribs among the muscles, corresponding to the

inside of the sirloin of beef. The patient is at length surprised with a soft tumour in the groin, or low down in the thighs, towards the inner knee. On the discovery the surgeon is summoned; the family is shocked by the intelligence, that the appearance is occasioned by purulent matter, descending from a psoas abcess; the most approved expedients of the chirurgical art are employed, and usually without success; the symptomatic fever comes on; floods of matter continue to be discharged; the body wastes in proportion, and scenes of misery succeed, which neither pen nor tongue is adequate to describe.

M O R A L.

I content myself with a very superficial extract from the history of secondary or confirmed scrophulous affections, as they are sometimes called. But it will be sufficient for the purpose, or a longer would be equally unavailing. Its intention is to deter parents from ever remaining content as long as they perceive a child of scrophulous temperament, suffering from local or general debility. There are I know medical practitioners in abundance, who when the immediate symp-

toms are slight, though they be ever so distinct in their character, will overlook the continual admonitions of experience, and encourage a dependance on accident.—Indolence creates an aversion to active and persevering measures. Pride disinclines people to listen to truths, which they suppose derogatory to themselves, and to their progeny. Nor is it difficult to perceive how readily in such circumstances parental tenderness will take part with parental pride. For these reasons, the destructive opinions of the shallow and the complaisant among the members of the medical profession so often prevail over the saving counsel of the sagacious and the sincere. Yet if reference were made to a set of umpires, free from all improper bias, it is easy to see what their award must be, when the signs of a tainted habit are undeniable and the system less vigorous than it ought to be for the season of life. Each as an impartial spectator would recommend the very thing, which as a partial parent and as one called upon to act in conformity to his sentence, he might decline. For whatever the future may be likely to bring forth, can any thing better be done for a young person than to render him robust? What though the process be tedious? and what though it should

require to be resumed from year to year? Who grudges pains and perseverance, when the question is to reclaim a piece of land from the waste? Shall we hesitate to devote as many months to health as we are willing to devote of years to gain? And shall we account it a small thing to escape, when we are threatened with deformity, mutilation, and torture?

But besides timely remedies and proper regimen, it is in our power to take another security against secondary scrophulous complaints, rising to an irremediable height, before they are discovered. This consists in teaching children accurately to distinguish the parts of the body. Such information will lead them to observe many important changes, which as they take place slowly, are apt to proceed unobserved. It would also render them alive to sensations, that would otherwise escape attention. We have seen that the psoas abscess is one of the most formidable of scrophulous complaints. It often, as we have also seen, runs on unawares to a fatal length. Yet it seldom happens that its progress is not attended by feelings distinct enough; only they are not painful, or not severely painful, and so are disregarded. Now the measure I recommend would, I

believe, infallibly occasion the disease to be detected at its commencement; and then, I have little doubt but it could be cured with great ease in the majority of cases. It is obvious that the utility of this measure would extend far beyond the range of scrophulous complaints. The ignorant of all denominations, and the poor and the young among the rest, we perpetually find unable to fix, with any tolerable accuracy, the seat of their maladies. Hence arises one great difficulty in their treatment.

But the labour of the parents would bring with it its own reward. In teaching they would learn. The persons of their children being subject to more frequent examination, it would be more difficult for disorders to lurk about them undetected. And the oftner they should examine, the more accurately would they be qualified to judge of every deviation from the healthy standard.

These considerations, I flatter myself, will reconcile some readers to that recommendation of the study of anatomy, which hitherto they may have considered as a ridiculous whim. If I have succeeded in giving them any tolerable idea of some, among the principal varieties of scrophula, they will not be slow to acknowledge, that it is a species of knowledge capable of universal and

daily subservience to the most beneficial purposes. That the state even of superficial parts will be understood the more clearly for some anatomical knowledge, is what I need not take much pains to prove: and for judging with any certainty of the affections of the deep-seated organs, it is obvious that such knowledge is indispensable. The less, indeed, any one is dazzled with the vain glare and glitter of outward trappings, and the deeper insight into the various conditions of human existence he has acquired, the more plainly will he discern the inestimable advantage which must accrue to every family from physiological,—that is, applied anatomical—information in its heads. It is probably not too much to expect, that when any considerable portion of mankind shall be capable of appreciating the value of the different sciences, and of distinguishing the most worthy objects of desire, physiology will come to be considered as the domestic science *par excellence*. At present we are in general poorly qualified to choose among the things which it is in our power to attain. We deem it profane to look forward, except to the precise distance, and just in the direction, which we have been taught. Hence it holds at this day nearly as in the time

of that sagacious satyrist of antiquity, who on a survey of the pursuits of his contemporaries, declares that few could distinguish substantial from specious blessings.

CAUSES FAVOURING OR PRODUCING SCROPHULA.

Of these some may be said to exist before the individual, some are casual and sudden, some require application for a long time before any sensible effect follows. I shall consider the two former sets of causes in the present section. The condition of the parents is frequently decisive for the progeny. The fruit of too young matches has been observed to be subject to scrophulous atrophy, and other scrophulous disorders. This is particularly said to occur in manufacturing places, where the intercourse of the sexes takes place early, and various circumstances co-operate with original weakness of stamina, in producing the disease. The same calamity befalls the children of marriages, contracted at too advanced a period of life;—no matter whether it be the old age of years, or the old age of debauchery.

All the world is aware that scrophula runs in families. Many curious opinions have

been advanced by minute observers upon this point. It is well ascertained that when the disorder has infected one generation, it shall often disappear in the succeeding, but come out again in the next, or even in that following. Hence we see that in infected families endeavours to eradicate the evil should never be intermitted, when its precursory signs are apparent. Many instances have occurred of numerous families, where part have been exempt from scrophula, and part miserable sufferers. This has led the ingenious to investigate, or tempted them to divine, the reason of the difference. According to some, the children, resembling the diseased or morbidly disposed parents, are those that become diseased. To ascertain the actual observance of any such law by nature, requires more extensive experience than commonly falls to the lot of one man; and it is always to be feared that the exceptions may be as numerous as the instances confirming the law. We often see one parent give feature, and another complexion: and sometimes one contributes this feature, and that another. I have seen various scrophulous patients strikingly like the untainted mother, while the father only had been a martyr to the complaint. So that the real laws of transmission

seem enveloped in the same obscurity as every thing else connected with generation. Some have believed that the morbid disposition follows the sex; and they quote instances, where all the sons of a scrophulous father have become scrophulous, and where all the girls have escaped, though the latter have borne a strong resemblance to the father.

Those who are intent upon keeping their family sound, had therefore better lay no stress upon such observations. If the father or mother, or a more remote ancestor have been infected, the circumstance ought to be regarded as a strong additional motive for adhering to those precautions, which the tokens of the scrophulous temperament or a weakly habit may suggest.

Nothing is more notorious than the tendency of the small-pox to induce scrophulous disorders, where there has existed the smallest predisposition. Probably also the small-pox has affected the glandular part of the system sufficiently to bring on the disease, independently of all predisposition. Nor is there any other consideration which induces experienced medical men to set a higher value upon the mode of inoculation lately introduced; since the fever attending the cow-pox appears by no means strong enough to

make a dangerous impression on any set of organs. For the glands are far from being the only part injured by the inoculated small-pox, even when mild in its symptoms. I have very lately been consulted for a young person of a thoroughly scrophulous race, in whom the small-pox, though nothing severe, left behind it a palsy of one entire side.

What is true of the small-pox holds in an inferior degree of measles. Low fever, scarlet fever, the malignant sore throat, excite glandular tumours. But these tumours often follow a different course from the scrophulous, when they occupy the same seat. They ought not therefore to be referred to the same head. Still by these febrile complaints, genuine scrophula, and scrophula of the most dangerous kind, is sometimes excited. It is therefore to be wished that the plan, now pursuing with vigour in several places for stopping the progress of febrile infection, may become general. *Fever wards*, or *houses of recovery* for the poor, might be established in every town, on a scale proportioned to its size and opulence. Contagion cannot pass long from person to person among the needy, without occasionally alighting upon the opulent. And when it does, they are not only, in common with others, exposed to the danger

of speedy dissolution, but also, under certain circumstances at least, to that which arises from a secondary superinduced malady. It is true that the fire of malignant fever is generally kindled among the poor. But when once kindled, it may justly be regarded as rising in a *gerbe*. Being seated therefore a few seats higher in the amphitheatre of life, does not secure any one against being reached by the fatal spray. There is scarce a town or city in the whole united dominions, where some possessor of useless opulence would not give the necessary sum to redeem the immediate or remote mischief, that has happened under his own roof for want of a public provision against the dissemination of febrile contagion.

*HINTS TOWARDS BRINGING
UP CHILDREN NOT TO BE
SCROPHULOUS.*

It is of most importance to make the public acquainted with the causes that are of slow operation. Thus every parent in affluent circumstances will perceive that he has them in great measure in his power. It will then remain for him to determine whether he shall set them to work, or in other words, whether he chooses to have his children af-

fectured with scrophula, or that they should grow up free from this calamity.

The diet most proper for encouraging the scrophulous disposition, is less in vogue now than formerly. People have at last suffered themselves to be persuaded to indulge weakly children with animal food, and its various preparations. But the dread of rendering the blood sharp, or of generating foul, acrimonious humours, still occasions some lots of children to do penance upon vegetable fare. Some of the most dreadful instances I have seen of the ravages of the disease, and of the transmitted disposition, have been, where the mothers were strict in this article. A few years ago, two healthy parents, who had subjected a very numerous family to a meagre regimen, boasted to me of their success in education. Since that time, a third of the children have been attacked by scrophulous ailments, without the intervention of any acute illness, except in one case. It would appear that similar misfortunes still more frequently originate from the same source on the Continent. "There are parents" says a modern well-informed foreign writer, "among our noblesse, who altogether withhold flesh-meat from their children till their fifth, and

“ even their seventh year, feeding them
 “ entirely on garden-stuff, wheaten bread,
 “ biscuit and milk, under an idea that some
 “ mighty advantage is to result to the poor
 “ little creatures. To such parents, on their
 “ boasting of the effects of this plan, I have
 “ been able to point out a distinct protu-
 “ berance of the belly, with other marks of
 “ tendency to scrophula. Thus I have
 “ wrought a conviction that the children
 “ were not so healthy as was supposed.
 “ Doubtless, in our temperate latitudes, a diet
 “ merely vegetable is not suited to infants of
 “ two years old and upwards.”—With us,
 preparations of animal food are most suitable
 to some children, less than two months old.
 Within the first year, infants will suck a
 bone with great glee. Nor when weakly,
 do they digest bread properly without a
 mixture of animal matter. The permanent
 state of the constitution depends in many
 instances upon a well adapted diet during
 the two first years. And I do not under-
 stand how parents can depend upon the
 strict observance of good rules, unless they
 will enforce it by personal inspection.

Another practice, formerly general, is very
 much gone into disuse. Otherwise, as con-
 stitutions go now, it would be difficult to

say who could escape scrophula. Should it be any where carried on at present, (and if so, it is on quite young infants), or should it be revived hereafter, let Sydenham unfold the consequences. “It is certain” says this celebrated observer, “that frequent purging
“ does much mischief in weakly habits, and
“ particularly at a tender age. — — — —
“ Tumours are produced in the belly; and
“ they increase in bulk the more, the oftner
“ the purging process is repeated. The whole
“ œconomy of the bowels is sometimes dis-
“ turbed by frequent purgatives. The me-
“ senteric glands acquire a preternatural
“ size, and these and similar complaints
“ pave the road to the grave.” At this day, the observation may not be unworthy the notice of persons, ready on every slight pretext to recur to worm medicines.

No single cause contributes more to the production of scrophula than cold. A single severe chill has often been found sufficient to produce true scrophulous enlargement of the glands; and there is much reason to believe that psoas abscess itself has often, among other causes, originated from continuing too long, though but for once, in cold water; from damp sheets; from wet unchanged cloaths; and from a single exposure

of some continuance to a rigorous atmosphere, particularly when the chill was directed to the back and loins. I have most certainly known abscesses, succeeded by a fistula, to take place in a scrophulous subject, in consequence of sitting down for a time on a wet seat; and it has gone exceedingly hard with the patient.

I have already spoken at large of protracted chills, and I have also considered the effect of mental depression upon the general health of young people. In what relation the latter cause, and those other causes with which it is usually associated, stand to scrophula, shall be stated in the words of an author, with whose sentiments on this point I have only become acquainted since the first part of this essay went to the press. Let his hypothetical phrases be excused, or rather let them be considered as awkward forms of expression. In recounting the occasional causes of scrophula, he says—"depressing affections of the
 " mind have the most pernicious influence
 " on the human body, particularly sadness
 " and grief, when long protracted. The nervous power languishes; the parts lose their
 " tone; the vital movements fail; hence the
 " circulation of the humours becomes slow,
 " the functions of the abdominal viscera are

“ disordered, the fluids grow viscid, coction
 “ and nutrition proceed imperfectly. That
 “ such affections of the mind may give birth
 “ to scrophula, appears as well from direct
 “ experience, as from analogy.” — — — —
 “ They exert their most deleterious influence
 “ upon children and infants. For it is on
 “ young animals that nature has especially
 “ bestowed vivacity of spirits and lightness
 “ of heart, in order to promote their growth
 “ and invigorate the system. Nevertheless,
 “ a senseless mode of education * presses
 “ upon the feelings of infants in a manner,
 “ scarce conceivable. Image to yourself
 “ little boys confined almost all day in a
 “ school, forced to commit a tribe of words
 “ and other things to memory, and kept in
 “ constant dread by that apparatus of terri-
 “ fying objects, which surrounds the master.
 “ Can any thing be conceived more pernicious,
 “ and better calculated to ruin the
 “ health of beings, so delicate and so tender?

• Severior sanæque rationi contraria educatio eo haud raro adigit infantes, ut moerore excrucientur, *acerbo sæpe magis, quam quis crederet*. Cogitemus pueros, qui per totum fere diem in scholis sedere coguntur, ad vocabula aliaque memoriæ imprimenda adstringuntur multiplici terribilium apparatus a magistris in perpetuo quasi metu detinentur, &c. &c.

“ What a variety of noxious powers combine
 “ their influence! an atmosphere vitiated by
 “ the multitude of those who breathe it—
 “ exercise of mind out of all proportion to
 “ the strength—fear, grief, sadness—defect
 “ of motion, which is so essentially neces-
 “ sary! There are many parents, who, with
 “ ill-advised kindness, place their little chil-
 “ dren the whole day long under the severe
 “ inspection of preceptors, to keep them from
 “ running about and coming to harm. Such
 “ abuses, we are convinced, must impress a
 “ character of melancholy on the minds of
 “ infants, and sow the seeds of numberless
 “ diseases in the body. Daily experience
 “ shews how efficacious they are in gene-
 “ rating the scrophulous diathesis.”

Among several instances I could adduce to
 shew how justly the author insists upon the
extreme bitterness of grief, experienced by
 children on first being put to school, and its
 bad effects, I shall mention two. A boy of
 fair average capacity had passed his time
 agreeably between exercise and learning. He
 had acquired a strong desire to learn Latin,
 and was put to a day-school. The unintel-
 ligible nonsense at the beginning of the ac-
 cidence, however, immediately checked his
 ardour. Whole nights of the first week were

spent in tears. By day he was gloomy and without appetite. His whole soul seemed to be absorbed by hatred of his tasks, and by fear lest he should not learn them against the appointed hour. The farther he went on, the more distressful were his sensations. While my opportunities of observing him lasted, he seemed to be in that despairing state, in which he might have said with Goldsmith's benighted traveller—

Lo ! here forlorn and lost I tread,
With fainting steps and slow,
Where wilds, immeasurably spread,
Seem lengthening as I go.

In the other case a more reserved melancholy followed the inhuman initiation into humane letters (*literæ humaniores*) : and a protuberance of the abdomen, accompanied by other scrophulous signs, seemed heightened by the mental sufferings into incipient atrophy. For the season insured us against the operation of cold, and there was no deficiency of substantial nourishment.

Our English schools seem not at all behind those abroad. By one who did not know their professed purpose, both might be taken for nurseries for scrophula. How well they answer to the character, is evident in general from the immense number of victims to fatal

scrophulous complaints among the youth in genteel life; and particularly from the prodigiously increasing frequency of crookedness or distortion in girls.

To dwell upon the other principal exciting causes of scrophula would be to no purpose. After what has been said, the following list will equally suffice for those, who may resolve to take the most effectual steps for obviating this evil, and for those who, after the fullest deliberation, imagine themselves obliged to determine that their sons and daughters must still take their chance.

An ascendent diet in infancy.

Abuse of purgatives.

Severe chills, or continued low temperature.

Of course, too light cloathing.

Habitual, or frequently renewed uneasiness of mind.

Want of fresh air and exercise.

Too much indulgence in bed, and in hot rooms.

Any other debilitating practices.

There are families, in which as there can be no doubt as to the imminence of the danger, there ought to be no hesitation as to the propriety of adopting a preventive plan, almost from the very moment of birth. Here if the mother be both feeble and scrophulous, it should be for-

bidden her to nurse. To the milk of a perfectly healthy foster-nurse, it will often be proper to join broth and diluted gravy. And should the history of the family, and the state of the little subject give ground for great alarm, a diet, in which milk forms but a very small proportion, will prove the most wholesome. Writers on infancy have not been insensible to the necessity of early recourse to preparations of animal food, where the constitution is feeble. But a superstitious regard to milk, derived from its real superiority in the healthy state, has hindered them from going far enough in those extreme cases, which I have at present in view. To a weakly child it is of no small consequence that it should interest its nurse. To this, digestible food will contribute more than may be supposed at first view, and without observation. An infant, tortured with perpetual acidity, will be perpetually torturing the ears of the attendants with its outcries. Hurtful methods of procuring an interval of peace will be pursued, or the nurse will desert her charge to breathe a few moments in quiet. I have known very young children become immediately placid on a change of food, and afford daily entertainment to all about them, by the expressions of their happy state of being.

The most sedulous attention should be bestowed upon cloathing and temperature. It is the most common part of the history of scrophulous invalids, that while they fluctuate between health and those terrible seizures, after which any moderate variation in the ordinary powers of nature can make little difference, threatening appearances shall arise in cold weather, and vanish in warm. Thus nothing is more familiar than to see glandular tumours about the neck come and go with the seasons. But it will not be sufficient in scrophulous habits to keep up a due warmth by mere covering. In children, able to use their limbs, the circulation should be kept brisk by frequent and gentle exercise; and they should never be suffered to languish on a bench for whole hours. At an earlier age, friction should be assiduously employed, as recommended in the preceding essay. On the approach of winter, and during an uncommonly rigorous season, it will be particularly expedient to be on one's guard against those relapses, which are so common in this complaint.

*OF SOME MISTAKES IN OPINION
AND PRACTICE.*

Medical superstition is to be sought, not only in the peasant's hut, but in the city and in the palace; beside the toilette of the lady of first fashion, and in the cabinet of the philosopher—more or less disguised perhaps, but still the same in substance.

Doctor Chr. Aug. Struve *Miscellan.* I. 77.

The negative detriment from erroneous domestic opinions concerning disorders, is full as great as the positive. While the nugatory processes, to which they give occasion, are carrying on, the morbid disposition increases into disease, or a precarious changes into a desperate state. It may therefore be of service to enumerate some of the more common vulgar errors, that they may cease to be an impediment to the recovery of lost health, and to the improvement of bad constitutions.

It is frequently imagined that scrophulous tumours arise from tough, ropy humours, causing an obstruction in the tumified parts. The idea of viscidty of the humours must have arisen from some actual phenomenon, referred by the fancy to a place, in which it did not exist. The slimy or mucous stools in mesenteric atrophy are as likely to have given rise

to this mistake, as any other scrophulous symptom. In other forms of the disease, this slime must have been supposed to occupy the glands, and by clogging the vessels, to cause them to swell, as a stream enlarges when a dam is thrown across it. But there is no one reason for believing that such viscid humour exists in scrophulous glands. Its being discharged in the manner abovementioned, is certainly no better a reason than the discharge of similar mucus, when a person sneezes, blows his nose, or has breathed a cold atmosphere for some time. The surface of the intestines is destined to secrete mucus or phlegm; and an excess of this humour at particular times, indicates nothing in regard to distant parts, to which this function does not belong. But if we reject the supposition of visciduity in the humours, because it is totally without evidence, we can go a step farther as to obstruction. For here the negative can be proved. In glandular enlargements, the vessels are so far from being impervious, or less permeable than in the healthy state, that their area enlarges, and new ones form to carry on the circulation in proportion to the growth of

the gland beyond its natural size *. The case is exactly the same as with the growth of the whole body. There is an addition of mass and bulk; and the arteries and veins are found to become of larger diameter.

The exhibition therefore of those infusions and expressed juices (as that of cleavers or goose-grass, water-cress, scurvy-grass, sassafras tea), which are intended to attenuate the humours, and purify the blood, or to clear the passages, rests upon a wrong principle. Nor are objections to butter, as an article promoting obstructions, and relaxing the stomach and bowels better founded †. Its nutritive quality, on the contrary, renders it very fit for the scrophulous, in any quantity in which it is easily digestible.

Hard selenitic and calcareous waters have been given out by respectable observers for a cause of scrophula. M. de Luc, for in-

* This is a matter of direct experiment. Ipse expertus sum, says Dr. Soemmerring, per glandulas absorbentes *tumidas* expeditiorem esse mercurii viam quam per glandulas *solitæ magnitudinis*.

† Panis, butyro illitus, sæpius sumptus, proculdubio infarctus faciliat, cum butyrum insuper primas vias relaxet nimiaque quantitate difficulter digeratur.

stance, (Lettres I. 17) remarks that where he has found incrusting or petrifying springs, there the people were scrophulous. In like manner, the water of melted snow has been held by many authors to be the cause of the bronchocele, or Derbyshire neck. But the property of waters of the first description, to deposit calcareous particles on the surface of the substances, over which they flow, combined with the hypothesis of obstruction, has obtained from various medical writers a sanction for this opinion, which it does not deserve *. The production of scrophula by cold and damp is supported by facts so pointed, that the greater number of cases in situations abounding with hard waters, may safely be referred to this head, though food of bad quality, and other evils attendant upon poverty, may claim their share also. BORDEU affirms, that in some valleys divided by a river, the part of the inhabitants exposed to the north are subject to glan-

* Quod vero assertum, licet ad strumas potissimum endemias pertineat, nullus tamen dubito tales aquas etiam diatheseos scrofulosæ evolutionem promoveri malumque augere posse. - - Gottingæ scrofulæ frequentissimæ sunt; aquæ vero ibidem scaturientes calcareis particulis insigniter abundant.

dular swellings, while those on the other side are exempt, though both use the same food, and live in the same manner. The glandular swellings however in these instances seem to be the Derbyshire neck, or bronchocele, a disease confined to one particular gland low down in the neck, and nearly allied to scrophula, though persons affected by bronchocele have often no other scrophulous mark. Respecting the Derbyshire neck, accompanied, as it appears to me, with phænomena, in these cases, manifestly scrophulous, there is an authentic observation which deserves to be given entire, as it distinctly shews how glandular swellings may be produced in a short time by natural agents, operating constantly and with great intensity, though in general they take place slowly and imperceptibly, in consequence of the more gradual application of their exciting causes. “ On occasion of tumours in the “ neck, very prevalent in our military school,” says the author of the observation, Dr. Lange of Cronstadt in Siebenburgen, “ the commanding officer desired me to examine “ the children — — I actually found thirty- “ six among forty-eight affected. More- “ over, of seven adults in the house, two “ had the same complaint. All looked very

“ cachectic, pale, and bloated. Many had
“ weeping eyes; the appetite was good in
“ all. The nature of the tumours was dif-
“ ferent in the different patients. In some
“ there was but one. Others had two or
“ three distinct. In others, several had con-
“ creted into a single cluster, which some-
“ times had its seat in the middle, and
“ sometimes on one side of the neck. Some
“ were of the size of a hazle nut, others of
“ that of a hen’s egg. Some were spongy,
“ others fleshy, others cartilaginous to the
“ touch. On other parts of the body, even
“ in the belly, there was no hardness or en-
“ largement to be observed. The affection
“ had been noticed in the school for the
“ first time since the last winter. The di-
“ rector shewed me a child that had come
“ into the house in perfect health but three
“ weeks before, and he had already a tumour
“ of the size of a walnut.”

“ The officers seemed willing to seek the
“ cause of this complaint in the water, which
“ the children used for drinking. The water,
“ however, appeared to me perfectly inno-
“ cent, because on a chemical examina-
“ tion, it turned out the purest water in
“ Cronstätt; and also because the whole
“ neighbourhood, where no such complaint

“ existed, was supplied from the very same
“ well. The cause, therefore, must have been
“ confined to the house itself. I asked if the
“ children were made to wear their stock
“ very tight? or if their scald heads were
“ treated with hazardous external means?
“ Both questions were answered in the ne-
“ gative. After the strictest enquiry, I con-
“ cluded that the cause of this general sei-
“ zure was twofold.”

“ The first cause appeared to me to be the
“ low, confined, damp, and crowded apart-
“ ments. The whole forty-eight children
“ lived in four small apartments on the
“ ground floor. They mostly slept two in
“ a bed; and the building was close by the
“ foot of a hill, planted with fruit-trees.
“ Moreover, some of the rooms had been
“ stabling a few years before, in consequence
“ of which every thing on the ground was
“ mouldy.”

“ The second leading cause appeared to
“ me to be the frequent use of leguminous
“ fruits, and of other crude food. That
“ these were the most probable causes of the
“ malady, I was farther led to conclude from
“ two soldiers’ children, in whose cases both
“ causes were very striking, and of whom
“ both were similarly affected. I advised

“ therefore, above all other things, to provide
“ the children with a healthy and spacious
“ habitation, and to put them upon light
“ vegetable diet. But as it was not so easy
“ to provide fresh quarters at a moment’s
“ warning, I proposed in the mean time to
“ open the windows, to fumigate the apart-
“ ments with juniper-berries, to omit sprink-
“ ling the floors when the rooms were swept
“ out, to furnish them with vent-stoves, to
“ make air-holes opposite the windows, and
“ to give the children some wine daily.”

By help of these measures, which in the main appear judicious, though some are of very questionable propriety, and by burnt sponge, mercurial laxatives, by some other medicines, and an eventual change of dwelling, “all the children” says Dr. Lange, “soon
“ regained their natural colour, and in a few
“ weeks not a glandular tumour was to be
“ found among them.” After the perusal of such very striking facts, the friends of young people will need no farther inducement to examine whether there be any connection between their glandular ailments, and cold from moisture. I have known instances where these ailments appeared certainly to depend on the damp of a wall in the bedroom of a school, upon the same condition

of a miserable office where an attorney's clerk has been confined to his desk for a large portion of the day, and of ill-lighted, and ill-ventilated merchants' and bankers' compting-houses.

Concerning the treatment of scrophula, when it affects superficial parts, two opposite incorrect opinions seem to have been entertained. The one, that it is dangerous to disperse tumours or to heal ulcers, lest the scrophulous acrimony should migrate to more important organs, and excite fatal complaints: the second, that nothing further need be done than remove these local affections.

I have already noticed the great chance there is of giving mercury to the scrophulous, unawares, in the form of worm-medicines of secret composition. Mercury is known in very small quantity to bring on that state of the system, in which slight exposure will occasion mischief. Sometimes the injury is sudden and marked; more frequently, it is slighter and unnoticed. In all its degrees, it is more likely to fall to the share of the scrophulous, than of others. None suffering so much from inflammatory affections on the one hand, or from the severity of the elements on the other. And we know that medicines of the above description are usually

administered at random, without sufficient probability of their irregular action being observed or restrained, or of the necessary precautions being enforced. A few years ago, I was consulted by letter for the daughter of the keeper of a turnpike gate in ——shire. A quack medicine had been given her, which from its effects must have contained mercury. I could procure none for examination. But the surgeon who had been called in immediately on the seizure, ascertained that a degree of salivation had been excited. In this state she went out one bitter night to open the gate, and was detained by some embarrassment for several minutes in the cold. She felt the chill strike through her, and soon afterwards an ascites, or dropsy of the belly, came on, and proved fatal. The girl had glandular tumours about her neck before taking the medicine, and was of a scrophulous complexion.

Leaving imprudences like these out of the question, I am exceedingly doubtful if the removal of scrophulous affections in one part, will ever excite them in another. It is true indeed that dependance ought never to be placed upon this partial method. In various places, we meet with ignorant country practitioners, who profess to cure the scrophulous

ulcers of the common people; and they often succeed for a time. I have ascertained in three different parts of England, that they use plaisters with calomel for this purpose. But though the ulcer heals, another almost always breaks out. Whence it clearly appears to be in general absurd to think of curing scrophula, without means, that affect the whole constitution. But there is no good reason to believe that mischief arises from this imperfect practice, when the substances employed do not get into the habit. A complete collection of facts would, I am inclined to suppose, tend to shew that to subdue a local affection, is to lessen the whole disease. Sometimes indeed no more of it is seen after the healing of an ulcer by local applications merely.

There is another reason for doubting whether the more dangerous forms of the disease are owing to topical remedies, even when they follow the use of them. Nothing is more familiar to medical practitioners than to see a large joint, or an internal part, attacked at the very time of the spontaneous subsidence of swoln glands, or of the spontaneous drying up of an ulcer, or some time afterwards. Nay, one of the more serious scrophulous ailments shall begin and hold on

its course, while a slighter one of earlier origin is proceeding with equal pace. A number of instances have occurred among the crowd of scrophulous invalids, which have offered themselves to my observation; and from these I shall select a case, that will abundantly illustrate the position.

April 14, 1802.—Susanna L. aged 33, of a dull, muddy complexion, with light hair and eyes, No. 4, Cart-lane, Temple, Bristol, miscarried six months since. On coming down stairs, she took a most violent catarrh. Soon afterwards she became aware of a tumour, about the size of the end of her little finger, in the left submaxillary gland. It is at this time as large as a child's fist, has gathered, and appears on the point of breaking.

Six weeks ago, she was sensible of acute pain in her knee, and about a week since perceived that the joint was enlarged. This enlargement has all the characters of a white swelling.

On being questioned respecting the preceding state of her health, she said that at 16, she had an enlargement of her knee. This, she was told, was a white swelling. She remembers perfectly that it gave her much more pain, and was much more swelled than at present. It was then dispersed, as she

supposes, by a liniment, though the time of life may be suspected to have chiefly contributed to her recovery. Now had the sub-maxillary gland been reduced in this case by external applications, how easily might any one have been misled to ascribe the present white swelling to that mode of treatment?

No case can speak more strongly in behalf of the necessity of carefully watching persons of a scrophulous habit, when weakened by any cause whatever. And I was glad to have such a confirmation of the important lesson, which I had been inculcating in a part of the present essay, printed before the case of Susanna L. fell under my observation. Here we have an example of a new attack at the interval of fifteen years, and at the age of thirty-three, in a person by no means subject to the rigours of penury.

The two following instances may further serve to shew that, on occasion of catarrh somewhat more severe than usual, equal vigilance is necessary, even in the more robust among scrophulous men. For the feverishness, attending catarrh, gives rise to genuine scrophula, as well as the fever, attending small-pox and other complaints formerly mentioned.

Samuel L. aged 24, with dark hair, grey eyes, and fair skin, pitted with the small-

pox, husband of the preceding Susanna L. said he had caught a very bad cold, shortly before his wife miscarried; that in about three weeks afterwards he was sensible of a swelling under his jaw; and that observing it to go on encreasing, he applied, when it had reached the size of a pullet's egg, to a public charity, and was told *it would never come to hurt him*. He says his strength is considerably reduced; and his general appearance bespeaks indisposition. The swelling which is in the right submaxillary gland has suppurated, and now discharges matter. Near it are several enlarged lymphatic glands. One in the axilla is proceeding fast to suppuration, and there are others hard and swelled near the collar-bone.

William D——, Tyler's-Court, Lewin's-Mead, Bristol, aged 29, with dark hair and grey eyes, (which two circumstances often concur in scrophula), skin not sensibly smooth or fair, and of a robust habit—six years ago caught a very violent cold, and has never since been free from cough and mucous expectoration in cold weather. In about three months after the commencement of his catarrh, the right submaxillary gland began to swell. After a time it broke, leaving a scar of the usual appearance. In about

a twelvemonth from the first seizure by the catarrh, a hardness was sensible in the sub-maxillary gland of the other side. This continued nearly in the same state for above four years; nor did it increase much till some time in the course of the winter just past. It broke only within these five days. The patient seems inclined to ascribe the last gathering also to another bad cold. His history clearly shews how unsafe it is to rest satisfied with any distinct scrophulous complaint, though it may subsist in the most perfect quiescence. Such a complaint ought to be considered as an enemy in ambush, ready to make his assault as soon as an opportunity offers: and to make it with more effect, as the person he attacks is less robust.

Should the proposal at the end of the present essay towards more effectual instruction in the art of preserving health be thought worthy of acceptance, it will be in my power, for some time to come, to bring forward these three instructive patients to those, who may wish to hear their story from their own lips.

The two latter declared that their relations, so far as they knew, had never been affected with any complaints of a like nature. Little stress indeed can be laid upon the testimony

of the poor in a case of this kind. But in families, too well informed to be ignorant of such an event, and too candid to suppress any information, which the physician may require, I have many times met with the same reason for believing that *scrophula* is *often not hereditary*. From the nature of the complaint indeed, I think we ought to be assured that it may originate in any individual without the least hereditary predisposition. One might, without much risk of failure, if such trials were allowable, engage to produce it by art. Such trials indeed have been unintentionally made with a result as decisive as in experiments conducted according to the most deliberate plan. Men and quadrupeds transported from their native hot climates into our colder latitudes, become continually scrophulous. Numerous examples of this fact have been afforded by negroes, and by apes of different species. These observations combined with the information to be obtained in families, leave no room for doubting that Europeans are perpetually rendered scrophulous as well by privation of warmth and of other necessaries, as by causes of a different nature.

Another prevailing error of considerable importance, as it tends to the destruction of

many constitutions, and to the encouragement of fraud, is the confounding of certain affections of the skin with scrophula. The news-papers are perpetually offering a cure for *scurvy in the blood*, and for the king's evil. Now the eruptions, vulgarly called *scorbutic* have no affinity to *scrophula*; and it is either the similarity of these two words in sound, or the occasional injury to the skin by the scrophulous swelling and supuration of superficial glands, that keeps up this miserable delusion. So easily do property and life become the prey of the vilest and most clumsy impostures, when man is left in ignorance concerning himself, so that his hopes and fears, relative to this dearest of all objects, are subject to no sort of controul from reason!

About half a century ago, Dr. Russell published his celebrated dissertation on the use of sea-water in glandular atrophy, and in other diseases of the glands. The testimonies of other respectable practitioners have since been added; and a large part of the public has learned to look towards the sea as a resource, to which they may fly in case of need without further enquiry.

The effects of sea-water and of the sea-air seem to be confounded in many minds.

And it is for the benefit of the latter that, in the maturity and towards the decline of summer, the metropolis pours out part of its crowds to the Kentish coast. That the moral and physical effects of a journey and of fresh scenery will do much towards the restoration of certain invalids is a fact daily experienced in the practice of physic. But in scrophulous debility, or under any serious scrophulous ailment, no expectation of this kind ought for a moment to be entertained from mere removal either to the sea-coast or into the interior of the country. It is to be lamented that the rich should adopt such false measures, and waste a portion of time, that perhaps cannot be retrieved. It is more to be lamented that those, who are not rich, should throw away, after the same hopeless chance, that money which they can ill spare, and of which a portion, expended upon proper means, would certainly accomplish the object they have at heart.

Of *sea-water*, after the value set upon it by such a man as Mr. Hunter, I dare not speak in a tone of the same disparagement. Invalids who have used it have however often come under my inspection without exhibiting proof of its virtue. And experience assures me that there is an infinitely better method

of treatment than any in which sea-water is concerned.

Nor should it be concealed from those invalids or from those friends of invalids, who may be disposed to take upon them the physician's office, that the internal use of sea-water—much more its use as a cold bath—has been manifestly followed by increase of scrophula and even by death. In the *Philosophical Transactions*, vol. lv. we find an account of a young lady of a thin, delicate constitution, very weak and sickly when a child, who “being incommoded now and “ then with an inflammation and swelling of “ the upper lip, which was thought strumous” (scrophulous), drank about a pint of water every morning for ten successive days. On a sudden, she was seized with a violent hæmorrhage, and on examination was found to be “perpetually spitting blood from the gums.” - - “She at length expired choaked “ with her own blood.” Her blood before drinking the sea-water was in a pretty good state. But some taken in her last sickness was mere putrid, dissolved gore.—On this fact, the late celebrated Dr. Huxham remarks that “with the thin, tender, and hectic, “ a course of sea-water seldom agrees.” And among the thin, tender and hectic, are not

most scrophulous members of affluent families comprehended? When cases, such as this, occur, we can by no means be certain that they will always be recorded. Nor is it necessary that there should occur many cases, so violent in their symptoms, and so rapid in their progress, to deter from the unadvised adoption of a plan, which in the feebler class of scrophulous subjects, many physicians will be disposed to join Dr. Huxham in considering as worse than inefficient. Parents, particularly observant of their children, have assured me that they have found those, sent to the sea for cold bathing against scrophula, to grow faster during this course, and for some time afterwards. At the same time, they were evidently reduced in strength. Nevertheless, in compliance with medical authority, the plan was continued for several seasons, though the accompanying debility and the accelerated increase of stature, a process already too rapid, failed not to raise doubts as to its propriety. These doubts were too often confirmed in the sequel.

It has been observed that scrophulous affections sometimes terminate favourably as to the general health, by sudden suppuration of the glands about the jaws. Some authors have fabricated whole theories out of this pheno-

menon.* And if, by any fortunate concurrence of circumstances, the cessation of growth should be succeeded by vigour, the indolent tumours will inflame, gather, break, and disappear for ever. Some of the strongest persons I know are marked by scrophulous scars under the jaw. They have been men, of active habits, using exercise in the free air, at no time subject to exhausting labour, always enjoying plenty, and exempt from long-continued mental suffering. Their mode of life was their cure.

A directly contrary crisis is much more common. It appears in the form of some one of the graver scrophulous diseases. The persons subject to it are those, who in their early years have been cruelly debarred from that enjoyment of the bodily faculties, which, by the laws of our nature, is destined to make youth happy, manhood healthy, and old age comfortable. The marks of this treatment will be apparent enough upon the person; and let these be the criterion for judging, by whom the unfavourable termina-

* Il semble qu'il y a, dans ce temps de crise, un mouvement interieur qui pousse, du centre à la circonference, une chaleur salulaire qui ranime les tumeurs indolentes, les conduit promptement à la suppuration, et procure des cicatrices solides.

tion of scrophula is to be expected and guarded against !

When the spine has grown awry, a machine for supporting the weight of the head is most strongly to be recommended. But let no one trust to machinery alone. It has no power to correct the vitiated constitution. Cases are for ever occurring, where the patient goes on with a steady pace to destruction, while the machine is perfectly answering its purpose.

Courses of sea-bathing and of water-drinking are usually limited to some six or eight weeks. Unhappily for invalids, this limitation is transferred to the treatment of scrophula. But nature refuses to be circumscribed within such bounds. Concerning the practicability of a radical cure, I refer to what I have already said. But the means must often be continued for months ; and it will be sometimes proper that they be omitted for a season and resumed. Whenever the enemy threatens to collect his scattered forces, we should constantly take the field, and put a stop to his operations.

Miss — —, for whom I have lately been consulted, had a white swelling of her knee, at five years old. This was perfectly cured by long application of blisters. However, proper medicines were either not given or not

continued long enough to remove the constitutional affection. She therefore continued weak and unhealthy; and of late, at the age of 9, a formidable affection of the glands about the jaws has been observed. This is one proof, among hundreds, of the insufficiency of the most successful local treatment, and of the necessity of persevering till the scrophulous debility is entirely removed.

I feel that these conditions are not altogether pleasant. It were to be wished that the business could be dispatched in one short campaign. It were indeed to be wished that a set of tumefied glands could be reduced, as an overloaded stomach can be relieved, at one operation. Or rather it were to be wished that the end could be attained, while patient and practitioner are as much at their ease as Owen Glendower was, when he—

Called up spirits for the vasty deep.

But as it is always probable that the constitution will be retrieved, and as the patients are generally young, medicine must be allowed to be a less evil than the disease. That the one is an evil as well as the other, I have no inclination to deny. But the great concern of prudence lies in the comparison of evils; and to understand in what proportion these

two stand to one another, I advise to acquire as accurate an acquaintance with scrophula as possible, even from actual observation of its worst forms. Let the master of a suspicious family frame to himself such pictures as the one sketched in an early part of this essay. In nature, he may easily discover the component parts of pictures more frightful. Does the reader revolt at so painful an employment of the thoughts? Does he not know that, in this world, disagreeable things must be either thought of beforehand, or be endured? And let him, if he can, assign a more powerful incentive towards the early use and patient continuance of the measures, necessary to prevent the realization of such pictures. I would have a person, threatened with such a domestic disaster, put himself first in the place of a scrophulous patient, whose flesh is melting down into matter, amid alternating chills and heats, and perspirations, and languors, and pangs; and then in the place of a parent, bending over so heart-breaking a spectacle. Nor would I have him rest even here. Let him once more dramatise these scenes in idea, according to the best powers of his imagination, making himself and his own children, the actors and the sufferers. His affection may not perhaps require the spur. But by exercises such as these, it will cease to be blind without ceasing

to be ardent. I defy any one, who will submit to them for a time, to follow the general parental practice, which consists in devotion to the petty interests of the offspring, and in neglect of its great interests. Would it, after this, be possible that such or such an addition to the stock of a child's wealth should ever stand in competition with such or such an addition to its stock of health?

We know what a sublime function Aristotle assigned to the antient tragedy. But there is a far more effectual purifier of the soul from unwise purposes and mean desires than fictitious distress—a purifier, which in that first, faint dawn of the science of human nature, it could not be expected that the eye even of an Aristotle should discern. It is the *pity and terror*, raised by a proper contemplation of the actual, home-bred miseries of life.

Nor let it be supposed that the feelings, which will arise from such contemplations, must be pure and uncompensated pain. On the contrary, if they be followed up by that energy of conduct, which they may be expected to inspire, they will prove a momentary sacrifice of that species, which brings the amplest eventual reward.—Here is a lot of young people, doomed by descent, by constitution, by the usages of families to what is most loathsome and destructive in the accidents, to

which humanity is liable. It is a fate, from which they would not have been rescued by the strictest observance of the rules, laid down even by some writers of the first authority on the management of children. But those, who had to form a scheme of life for these children, were clear-sighted enough to fix upon that object, to which the extemporaneous decision of common sense and the most careful consideration agree in assigning the preference above all others united. The issue corresponds to the wisdom of the choice. Then it is that the idea of past danger rises only to render the sense of present security more grateful, and the pleasure, springing from the difficult and well-accomplished task of education, is enhanced by remembrance of the pain, in which it was begun.

What piece upon the stage, with the help of the strictest poetical justice, can fill the mind with equal serenity? Or what emotions, excited by the drama, can be compared for effect in rectifying the moral sentiments to those, by which so happy a family denouement was prepared?

END OF ESSAY SIXTH.

ART OF
PRESERVING HEALTH.

It has always appeared to me extremely feasible to give PRACTICAL instruction, provided one could find persons really in earnest to become proficient, in this art. Five years ago, when employed in drawing up an address to be delivered before a promiscuous audience, assembled to receive some elementary information, respecting the structure of the human body, I ventured to deliver such an opinion. Nor will it be easy to find a fitter opportunity for reviving and enforcing it than at the close of a series of considerations on scrophulous diseases. The terms I used were the following — “ *I do not see why popular*
“ *CLINICAL lectures should not be joined to*
“ *popular anatomical lectures. They should*
“ *doubtless differ widely both in plan and exe-*
“ *cution from clinical lectures for medical*
“ *pupils. It must be their aim to make fully*

“ sensible the mischiefs arising from systematic
 “ irregularity; from injudicious management
 “ after exposure to the inclemencies of the
 “ weather, and from the other innumerable
 “ ordinary errors of individual conduct. They
 “ must explain the origin and conduct, much
 “ more minutely than the treatment of diseases.
 “ They may be conveniently undertaken where-
 “ ever there exists an infirmary.”

It may not be unnecessary, for the sake of
 some readers, to observe that *clinical* lectures
 are instructions grounded upon the cases of
 patients, actually submitted to the inspec-
 tion of the pupils. Their introduction is the
 greatest improvement made in the schools
 of physic. What will confer greater skill in
 the cure of disorders, must be equally effi-
 cacious as to their prevention. And in this,
 not the members of a particular profession
 only, but all mankind have an active in-
 terest.

The avidity, with which people read and
 converse about the means, continually pro-
 posed for influencing the fate of the rising
 generation, might lead one to believe that
 they would be equally eager to qualify them-
 selves for promoting its happiness in the most
 effectual manner. And after the necessary
 allowance for the difference between talking

and doing, it might assuredly be expected that the prospect of advantage to their children would induce numbers of parents to embrace a plan, demonstrably conducive to this end, and wholly free from danger, disgust, or inconvenience.

To a medical practitioner, who has constant intercourse and considerable influence among the invalid poor, it must be easy to form such a plan. He would only have to select such patients as would, without reluctance, and could, without impropriety, be presented to a number of spectators, before whom he should question them as to the origin and nature of their complaint. To do away every shadow of indelicacy of conduct towards the indigent sufferers themselves, he should, before their appearance, prepare his audience for observing the most significant peculiarities in the complexion, features, and person. But these points of management will easily occur to every reader's imagination. After the invalids had retired, the connection of cause and effect in the case should be pointed out. Explanations from anatomy, chemistry, and other sciences should be introduced, and the effect of the medicinal and dietetical treatment be shewn by producing the party, subjected to it, from time

to time. It should be the principal object to illustrate the obscure origin, and to detect the insidious course, of those chronic diseases of the country, which infest all conditions alike. It would be impossible that there should not offer an immense multitude of facts extremely curious, if considered only as belonging to the natural history of the human animal, and acquiring a tenfold interest from a perception of their applicability.

The author has it most amply in his power, as will appear from the annexed list, to execute the scheme, of which he can here exhibit only a very imperfect sketch. The simplicity and the success in treating the worst and most common chronic diseases at the Pneumatic Institution is such, and the fact has become so well known in Bristol and its environs, that poor invalids are resorting to it in rapidly increasing numbers. And among these, the choice would be very much unrestrained. All the forms of scrophula would be seen, and it would appear in what a large proportion of instances the disorder could be removed, even under the disadvantage of too sparing and meagre a diet. The power of medicine in arresting the progress of consumption in its early stage would be witnessed. And it would be shewn with what

perfect certainty indigestion, hypochondriasis, hysteria, and a kindred and very harrassing tribe of complaints can be removed by means, first brought into use at this establishment for medical research. Similar success would be witnessed in cutaneous eruptions. Many instructive particulars, relative to the effects of groundless fear, of vulgar prejudices, and ill-adapted dress, have come before us, and the same will not fail to occur hereafter.

There is one lesson, which I have been taught by my own experience and that of others. He, who would render mankind any great service, should qualify himself by as long a preparation of patience, as the Pythagoreans were enjoined of silence. Otherwise, what can the seed of his good intentions bring forth to him, but the bitter fruits of fretfulness and misanthropy? I shall therefore, without chagrin, see a project, which I think capable of producing boundless benefit to the human race, rise from the humblest beginnings. And if there be within reach of me only as many parents, disposed to learn from the book of nature how to guard their progeny against ill health, as the angel required of righteous to save Sodom and Gomorrhah, I shall not disdain to give them the best assistance in my power. I shall impose upon them

no heavy burden of trouble or of expence ; I shall only require them to wait upon me at the Pneumatic Institution at my own seasons, and to bestow upon the selected invalids such small gratuities as may compensate for their loss of time, and render them punctual in their extra attendance. A few mothers of growing families I should be glad to find accepting this invitation. I would pledge all I am worth, that those, who can overcome their first nameless and unfounded apprehensions, shall not only not meet with any thing to give them the slightest feeling of repugnance, but that they shall be gratified in a high degree, as well as instructed.

Number and Kinds of Cases of Patients, who have applied at
the Medical Pneumatic Institution, from January 1
to April 18, 1802—registered by J. KING, Surgeon.

	No. of Cases.		No. of Cases.
Fevers, intermittent	13	Headache	9
— continued	7	Giddiness	7
Dysentery and Diarrhœa	8	Palsy	9
Acute Rheumatism	4	Epilepsy	6
Inflammatory Sore Throat	2	Catalepsy	1
Catarrh chronic and acute	38	Bleeding at the nose	2
Hooping cough	36	Urinary and calculous com-	
Shortness of breath of different		plaints	10
kinds	22	Dropsies	12
Blood spitting	4	Piles	3
Pulmonary Consumption	52	Fistula	2
Chronic Rheumatism	39	Cancerous	3
Scrophulous affection of the		Divers cutaneous eruptions	41
- - - - - eyes 11	}	<i>besides</i> ditto from poison	1
- - - - of the ears 8		Itch	4
- - - - swellings 25		Scald head	3
- - - - - abscess 7		Vene real	10
- affections of bones		Irregular action of the heart	2
and joints 17	}	Diseases of the eyes—external	6
- mesenteric atrophy 21		ditto—internal	6
<i>Scrophulous in all</i>	89	Deafness	9
Rickets	3	Worms	12
Indigestion	32	Abscess and tumours	5
— bilious	17	Sprains and contusions	7
Pain in the stomach	2	Sore legs	12
Hypochondria	8	Gout	3
Hysterical, and other diseases		Inoculated for the Cow-Pock	19
peculiar to women	98		
		Total	678

ESSAYS
ON
THE MEANS
OF
AVOIDING
HABITUAL SICKLINESS,
AND
PREMATURE MORTALITY.

ESSAY SEVENTH.

On verra toujours beaucoup de pulmo-
niques parmi nous, tant que nos modes tendront à l'affoi-
blissement de la poitrine et que peu de personnes auront
l'esprit assez fort pour se mettre au dessus de l'usage.

BOURREU *des bains.*

ESSAY
ON
CONSUMPTION.

IN a series of tracts on the means of avoiding *habitual sickliness* and *premature mortality*, I cannot expect that it will be allowed me to decline all consideration of the principal source of both calamities in the countries which we inhabit. Otherwise I might content myself with referring to what I have already written for popular use*. To a physician, however, whose fortune it is to be consulted by numerous invalids of all ranks, new illustrations of the nature and origin of so destructive and common a malady will be offering themselves from time to time. Hence he will continually discover cause for new admonitions, and meet with examples that more severely put to the test the propriety of those formerly given. Nor might it be without its use to draw into a narrower compass the materials of a more extensive treatise,

* *Essay on Consumption*, 8vo. Longman and Rees.

even if later reading, reflection, and experience, had not placed the author far above the necessity of confining himself to an abridgment of his own work.

When the danger is general, admonitory writings cannot easily be too much multiplied and varied. Consumption may be regarded as a vast pit-fall, situated on the high road of life, which we have not sense enough of our common interest to agree to fill up, or fencible round. Heedless fathers and mothers are for ever guiding their sons and daughters directly into it. Nor is it often that those who obtain, and who in other respects deserve, most credit for a diligent discharge of the parental office, will be at the smallest pains to conduct them safe over this treacherous ground. It is therefore the more incumbent upon those, who are acquainted with the margin of the precipice, to plant upon it marks, striking enough to catch every eye. And how happy if bands of volunteer watchmen would submit to the generous service of filling all the approaches with their warning cries!

MORTALITY FROM CONSUMPTION.

Should it be asked, *in what manner is the existence of every person, born and continuing*

to reside in the British islands, most likely to terminate? the following table will supply the answer. The whole number of deaths for several years together, at two different periods, is taken from the bills of mortality; and the four largest items subjoined. It will be seen what a proportion consumption bears to the whole, and how regularly the deaths under it increase, with the increase of the total number of the burials.

Years.	Buried.	Stated to have died of Consumption.	Of Convulsions.†	Fevers.	Small-Pox.
1790	18,038	4,852	4,003	2,185	1,617
1791	18,760	5,090	4,386	2,013	1,747
1792	20,213	5,255	4,646	2,236	1,568
1793	21,749	5,474	4,788	2,426	2,382
1794	19,241	4,781	4,358	1,935	1,913
1795	21,179	5,733	4,758	1,947	1,040
1796	19,288	4,265	3,798	1,547	3,548
1797	17,014	4,776	3,804	1,526	512
1798	18,155	4,533	3,663	1,754	2,237
1799	23,068	5,721	4,512	2,712	2,400

Under one head, those that die of mesenteric atrophy, and of certain other species of decay, are thought to be registered along with the victims of pulmonary consumption. But in the same bills we find a number, seldom

† Convulsions is a name that stands for a variety of disorders, totally unlike each other. Children commonly die convulsed whatever may have been their complaint; and almost all such deaths are referred to this head.

greatly short of a thousand, under the titles asthma, phthisic, and cough. And these, if the cases were accurately sorted, would, I imagine, be found to go a considerable way towards replacing the sum it would be necessary to deduct, on account of inaccuracy, from the decay induced by genuine phthisical affection of the lungs. Of 1654 buried in one parish in Bristol—683 stand under the title of consumption or decline: and from a register at Shrewsbury it will be presently seen that for ten years, above one death in four is appropriated to consumption.

At Chester, in the years 1774 and 1775, particular pains were taken to obtain correct lists of mortality. Strict injunctions were given that no disorder, unless attended by a cough, should be called consumption. The faculty, in general, sent written certificates, or gave verbal information, to the clerks of each parish, of what disorder the patients died. And what was the result? Did these precautions afford any reason for supposing that the London bills of mortality give too formidable an idea of the havoc, made among the human species by consumption? So far from it, that in 1774 more people were found to die of this disorder, in the healthful city of Chester, between the ages of 10 and 50,

than of all other diseases put together. And in 1775 more died between the ages of 15 and 50. (*Philosophical Transactions*, LXIV. & LXV.) The numbers will be given below.

It were greatly to be wished that it were by any means practicable to carry on the same enquiry from house to house, if not through the whole kingdom, yet in several cities, towns, and country parishes; so that an universal conclusion might be drawn. We might then have something, like a precise notion of the proportion of families, which this disorder puts into mourning, and of the average proportion of seizures to the whole number in each family. I feel that at first there would arise in innumerable bosoms a passionate determination to oppose such an enumeration. To some inconsiderate persons, especially when they are not personally affected, it is the very worst part of the worst evils, that they themselves should be made to fix their attention upon them, or that others should come to learn their existence. But it is not the part of the firm and the prudent “to hide from themselves their “state.” They will bear to contemplate it, as well knowing that this is the first step towards its amendment; and the tender father of a family might be disarmed of his

indignation, if he were requested to consider that it is not so much his own being and happiness that are involved in what he may, at first hearing, desire to conceal from himself and from the humane enquirer, but the being and happiness of others, over whom though he has great positive and almost uncircumscribed negative power, he would not deliberately stretch it to the hazard of their destruction.

SICKLINESS from the Consumptive Disposition, where the Disease itself never forms.

But neither the preceding statements, nor those to be produced below, give any thing like an adequate idea of the misery, connected with consumption. For I apprehend that, in consumptive families, numerous enough to afford field for observation, another phenomenon, not less melancholy, and not less demonstrative of the necessity of preventive measures, would very generally shew itself. The individuals, spared by consumption, would be found a prey to other complaints. They would hold their station among the living, not by the tenure of good health, but merely by favour of one bad disorder in possession keeping out a worse. Some months

ago, I had under my care a patient of great talents and observation, who looked forward to that fate, which consumption so often brings upon females in their prime of life, and which in this instance could not be averted. When I meet with invalids, observant of themselves, and disposed to communicate, it has long been my custom to request a particular narrative, in writing, of all the circumstances, which they suppose to have any relation to their complaint. It is the only way, I believe, to get at the knowledge of the original causes of disorders, when they lie any way remote. This patient not only drew up the following account with great readiness, but begged I would use it for the benefit of persons, threatened with similar danger, if I thought it likely to answer so good an end. With some slight variations, which however make not the least difference for the better or the worse in regard to health, I believe it will apply in most of the instances, now become more frequent and likely to increase, where a plan is adopted for bringing up children, that has the credit of being extremely rational, and which is certainly, in many respects, preferable to the common routine, though still miserably deficient.

“ Our family was large. There were twelve
“ of us in all, eight sisters and four brothers.
“ I do not reckon three others, that died in
“ their infancy. Our ancestors were said to
“ have lived to a good old age. My grand-
“ father was a great martyr to the gout.
“ Otherwise, no hereditary disorder had ap-
“ peared on either side. My father was of
“ a studious turn. He had always paid par-
“ ticular attention to the subject of educa-
“ tion. He was ambitious that his sons
“ should shine; and his daughters he wished
“ to have more information than in general
“ falls to the share of women. It lay near
“ his heart that his domestic arrangements
“ should be admired in the neighbourhood.
“ He accomplished his purpose *to all appear-*
“ *ance*, for it is by no means clear that the
“ compliments he received were always quite
“ sincere, though he was too full of his own
“ anxiety to perceive the circumstances that
“ often gave me suspicion. Alas! had we
“ been thoroughly known, we should have
“ been found to deserve pity, and not admi-
“ ration !”

“ Do not suppose we were tortured into
“ shape, or fixed down beside the harpsichord
“ for half the day. Nothing of this. We
“ were suffered to pursue the accomplish-
“ ments of music and dancing only so far

“ as not to appear awkward in company, or
“ quite ignorant of the subjects of common
“ chat. For the rest, pains enough were taken
“ to secure us against

A youth of frolics, an old age of cards.

“ Nothing was held cheaper with us than
“ the things, at which girls are set to work
“ so hard, as soon as they begin to be *Misses*,
“ and which they find so useless as soon as
“ they are come to be *Mistresses*. We were
“ scarce ever assembled in full circle, without
“ hearing these things made the theme of
“ ridicule. My mother had too good rea-
“ son for comparing what she had suffered
“ in the acquisition of accomplishments at
“ school, and their insignificance afterwards.
“ But what with us was substituted for ac-
“ complishments, I can most conscientiously
“ attest to have been scarcely more conducive
“ to my own happiness. You shall imme-
“ diately hear whether my sisters could attest
“ the same. Vanity was still the ruling
“ principle. It was vanity indeed of loftier
“ pretensions, and a more solemn aspect;
“ but still it was vanity. For instruction, it
“ seems, may be made matter of vanity, as
“ much as dress. Of this our feelings the
“ more forcibly convinced us, the older we
“ grew.”

“ The graver part of light reading was
“ our amusement, and the lighter parts of
“ science our study. The choicest of the new
“ publications for children and young people
“ were procured, with unfailing diligence, for
“ our use. They often entertained us, and we
“ were certainly indebted to them for much
“ improvement. But ah ! how possible that
“ parents may avail themselves to the utmost
“ of these helps, and their children grow up
“ to be the veriest of wretches in themselves,
“ however they may shew in competition.
“ Our example shews that something else is
“ wanting. This *something* failing, all may
“ as well fail. There was not the least
“ idea of laying our appetite under any
“ restraint. But health was never a constant,
“ and seldom an occasional, concern. How
“ clearly do I perceive this deficiency since
“ my conversations with you ! Different little
“ domestic incidents occasioned us now and
“ then to suffer from too long fasting. Our
“ sufferings consisted in a certain inward
“ sinking. We eat not so much from relish
“ for food, as to get rid of this insupportable
“ sinking. We were unacquainted with the
“ pains of hunger ; but then we knew as
“ little of the pleasures its gratification
“ brings. At dinner, we collected with heav-
“ iness in our looks, and I know not with

“ what sense of disrelish in our palate, and
“ of mawkishness in the spot, where the
“ heart-burn is felt at other times. I often
“ thought that a spectator, used to a party
“ with a proper appetite, would suppose we
“ had just taken, or were about to take,
“ physic. It is certain we regularly sate
“ down as if it had been to a task. Our saun-
“ tering walks were in the same listless tone.
“ We passed through a few fields. We set
“ out languid, and came home again without
“ feeling refreshed. Except in hot weather—
“ and then we were oppressed—our state
“ was uncomfortable from chill—our feet
“ generally stone-cold. But in sharp frosts
“ —oh! I want words to express the mi-
“ sery of that cramped, contracted feeling,
“ which then seemed to clasp us all over.
“ The whole day we had the goose-skin fast
“ upon us.”

“ We all fell off on the *change of consti-*
“ *tution*. To our surprize, we found our-
“ selves without our former childish spright-
“ liness. I, for my part, often looked round
“ to try if I could discover which way mine
“ had flown, and hoped it would return after
“ a time. But it visited us no more. There
“ was something in the head or the stomach,
“ or in *the nerves* I fancy, for we felt down-

“ cast and cheerless, that kept us uneasy for
“ the moment; and we had no relief to ex-
“ pect in the regular changes of our day.
“ But I fear I shall not be able to make this
“ state of nameless discomfort well under-
“ stood. And if I could, it would prove as
“ tedious in description as it was to endure ”

“ At 17, my eldest sister began to look
“ thin and sallow. She had no spirit to do
“ any thing, though formerly very indus-
“ trious, and would be continually brooding
“ over the fire. She was told she was lazy,
“ and that if she would but exert herself,
“ she would be very well again. She did
“ exert herself, and grew worse and worse,
“ till it was necessary to call in a physician;
“ and he declared her lungs to be affected.
“ She died of a decline in about half a year.
“ Another died in the same way, after hav-
“ ing had the measles, which she never
“ properly got over, at least never regained
“ her strength. A third was seized with a
“ short, teasing cough in winter; which was
“ thought nothing of. But it got worse in
“ the spring, which turned out very cold,
“ and she quickly fell into a decline. I can
“ evidently trace back my own illness for
“ more than five years. I have been harrassed
“ by shortness of breath for all that time.

“ There have been shooting pains too in my
“ chest; and I have been very subject to
“ flying shivers, and at times greatly flushed,
“ with most disagreeable dry heats in the
“ palms of my hands, and throbbings in my
“ neck and temples.”

“ In a *certain respect* we were scarce ever
“ proper, though otherwise we were unwell
“ in opposite ways. My sister, who has
“ applied most closely, is much plagued
“ with head-aches, which return more and
“ more frequently, and sometimes almost
“ distract her with the pain. The one you
“ have seen with me is as much troubled by
“ weakness of her stomach. Her digestion
“ is miserable; she is quite oppressed with
“ wind; and the loud noise it perpetually
“ makes, occasions her the greatest distress.”

“ My next younger sister was early sub-
“ ject to momentary faintings. Afterwards,
“ as it is believed in consequence of the
“ shock from my father’s unexpected death,
“ a variety of nervous symptoms came on,
“ and the health has been entirely deranged
“ ever since. No remedy, that medical skill
“ could point out, has been omitted; but
“ every symptom has increased in violence,
“ occasioning the most agonising cramps
“ and spasms, which alternately invade the

“ whole frame. It is quite impossible for
“ me to describe properly the whole of this
“ distressing case, the cramps and spasms
“ often coming to such a height as to cause
“ a deprivation of the use of the limbs, and
“ to render confinement to bed necessary for
“ two whole years.”

“ I have two sisters married. One has no
“ family. The other has had three children
“ in little more than four years. Neither
“ can be boasted of. But the latter has been
“ in a terrible state ever since her first con-
“ finement. She is said to be threatened with
“ a nervous atrophy. My brothers can none
“ of them be called strong. Two have
“ had no particular complaint. One is ex-
“ cessively subject to take cold. Apprehen-
“ sions are entertained for the fourth, who
“ grows fast, is narrow-chested, and has
“ bleedings at the nose very often.”

“ Since I became alarmed about myself,
“ I have done what I understand patients
“ are more apt to do in other complaints,
“ and what you medical gentlemen all set
“ your faces against. I have read different
“ treatises on consumption, and have been
“ particularly struck by the observations I
“ have met with, relative to its origin. These
“ observations unfolded to me the melan-

“ choly secret of my own history. Must
“ not the house-lamb always turn out a
“ helpless, shivering, short-lived creature, in
“ comparison with the field-lamb, though
“ the utmost pains be taken in training
“ him? I feel some satisfaction from the
“ idea that my parents did not live to see
“ the compleat issue of all their cares, though
“ they might not have been aware that the
“ miserable situation of a surviving child
“ was the genuine issue of those cares. They
“ seemed not to be sensible of it in the two
“ they lived to lose. Would to heaven that
“ other parents could be made sensible in
“ time, when they are incurring the same
“ danger! Nimble fingers and nimble heels are
“ very far from being of the same value with
“ a well-furnished head and a well-disposed
“ heart. But what avails the one more than
“ the other, in guarding against the horrors
“ I have seen and felt? Nothing surely—or
“ does your experience entitle you to object
“ to this inference of

LOUISA ————?”

If a plan, formed upon mature deliberation
and with some judgment, be liable to be thus
cruelly defeated in consequence of one capital
oversight, what can we expect in the total

absence of all sort of consideration? In fact, we shall find that young people, confined to frivolous pursuits, grow up to be so many *stocks*, on which consumption, or some other complaint of debility, does not fail to engraft itself.

HAS CONSUMPTION INCREASED IN FREQUENCY?

La Phthisie pulmonaire est un des plus grands fleaux de l'humanité *par sa nature* et ses résultats. - - - Elle est très-commune, et chaque jour elle semble le devenir davantage.

J. B. F. BAUMES, 1795.

Phthisis recentiori ævo certo certius quam olim frequentior.

C. G. T. KÖRTUM, 1789.

An enumeration or census of phthisical families * would enable future generations

* Such an idea will perhaps be thought less absurd, if it be considered that the thing has actually been realized upon an inconsiderable scale. The author carried on an enumeration of this kind through a small town and two parishes, to discover whether the mortality among poor children was not in proportion to the number of children in a family. A parish in Chester was numbered for medical purposes. Dr. CAMPER, the late great anatomist of Holland, numbered the inhabitants of Francker to

to determine whether the disorder be on the increase or the decline. This is by no means however, for the present, a question of idle curiosity. For there can scarce be imagined a more powerful incentive to every measure of prevention, than the knowledge of a fatal disorder having become more frequent by regular progression. As the children of consumptive parents are peculiarly liable to consumption, if it have once become more ge-

ascertain the proportion of the lame. “ In the city where “ I live,” says he, there are 2,775 inhabitants, among “ whom 96 are lame. Deducting 104 infants, not yet able “ to walk, there remain 2,671, which number divided by “ 96, gives 28. Therefore there is one lame in 28.”—*Haarlem Verhandelingen*, vii *Deels* 11 *Stuk*. *bl.* 451. There are many examples of a similar kind, though not subservient to the purposes of the exact medical enquirer, dispersed through the transactions of societies.

I believe that care to suppress the knowledge of the existence of complaints in families is often fatal to the weakly. The parents do not attend to the early stages, and for this reason, as they ought. Advice is tardily sought. The delicacy that would prevent an enumeration conceals nothing; because a general statement in numbers would disclose nothing with regard to individuals. The particular facts as known to friends and neighbours, are useless. A general statement might be of the highest utility. And what would strange readers and foreigners learn of A. and B. from numbers, expressing the proportion of consumptive families, to the whole families in Great Britain?

neral, it must go on spreading at an accelerated rate, unless it be checked by some new power. And does it not feel still more inhuman to withhold our endeavours, when the evil threatens to affect unborn generations, more and more widely, in indefinite succession, than if its channel and its course were limited? The narration, with which the preceding section concludes, gives an example of a very common calamity. On enquiry it will generally be found that *families, infected by consumption, are in other respects more sickly, or less acquainted with the enjoyments that flow from a vigorous habit of body, than families equal in number and other circumstances, but exempt from this disorder.* This will hold almost without exception, where consumption attacks part of the offspring of consumptive parents. The cause too, whatever it be, which renders us liable to this kind of malady, must have the same character as the effect. It must have gone on increasing or diminishing in proportion. And by attending to this, we shall be in some measure assisted in detecting it, than which we can have no concern more important.

It is certainly a very prevailing opinion among medical writers, that consumption is more frequent than formerly. But if we en-

quire what may be the reasons for this opinion, we shall not find them altogether satisfactory. Our predecessors have not left us any certain data for the comparison. No practitioner of medicine has it in his power to compare several generations. It falls to the lot of few to have very extensive experience of more than one generation. The experience of a practitioner may be partial even on the spot where he resides. He may be consulted by particular orders chiefly, or but for particular disorders. Much less may his observations apply to a whole country. My reason for acceding to the opinion of authors is this. I perpetually find consumption attacking new families. Nor does it appear to cease equally often in old ones, unless by rendering them extinct. If this be a fact generally observed, it must be allowed to have great weight in deciding the question.

What can be learned from the bills of mortality, perfectly confirms the same unpleasant conclusion. The confirmation is the stronger, because the conclusion appears to have been previously drawn from experience in the gross. I do not know, indeed, that any one had been at pains to examine the bills of mortality with this view, till Dr. Heberden, who, in the work formerly quoted,

has presented us with the following statement. It was deduced, he tells us, in a coarse manner, from an average of about ten years. Its purpose is to exhibit a general comparative view of the mortality, occasioned by different causes, at three periods : namely at the beginning of the eighteenth century, at the middle, and at the close. Care was taken to select, from the bills belonging to each period, those years in which the total amount of deaths was nearly alike, viz. 21,000, a part of which are only introduced here.

	Beginning.	Middle.	End.
Abortive and dead-born	600	5,070	750
Bowel complaints -	1,100	135	20
Consumption - -	3,000	4,000	5,000
Dropsy - - -	850	900	900
Evil - - - -	70	15	8
Fever - - -	3,000	3,000	2,000
Gout - - -	26	40	66
Palsy and Apoplexy -	157	280	300
Ricketts - - -	380	11	1
Small-pox - -	1,600	2,000	2,000

The victims of consumption, therefore, if the same order of things continues, will probably soon be double of what they were a century ago. The two extracts from the register of the parish of Holy-cross in Salop, inserted in the Philosophical Transactions, would indicate a much more rapid rate of progression, unless the second ten years were peculiarly productive of phthisical complaints.

For the four articles before selected from the bills of mortality, they give as follows;

From Michaelmas 1750, to Michaelmas 1760.

Buried in all.	Consumption.	Convulsions.	Fever.	Small-Pox.
365	47	9	39	33

From Michaelmas 1760, to Michaelmas 1770.

Buried in all.	Consumption.	Convulsions.	Fever.	Small-Pox.
365	101	31	35	46

It is in this instance as in the London bills. And as far as the documents we possess enable us to judge, wherever the total of deaths appears remarkably swelled, a correspondent augmentation is found under the article consumption, which by no means holds of other articles so regularly. Nor is it the proportion of the consumptive only at different periods that has the strongest claim to our regard, but the proportion taken along with the absolute numbers. If from 3,000, 4,000, and 5,000, which are the sums assigned to the beginning, middle, and end of the century just closed, the cyphers were cut off, the addition of two-fifths to the mortality would be scarce more a matter of general concern, that the fatal accidents that have followed the prick or the scratch of a pin.

*PERSONS MORE OR LESS LIABLE
TO SEIZURE.*

This great mass of disease is however far from being equally distributed among the members of society, though no age or station can flatter themselves with compleat security. Some fall into consumption accidentally; others from original disposition. The first class comprehends those who would never have been consumptive, but for the nature of the occupation, to which they have been put, or for some accidental occurrence. They may be therefore said to have been forced into the disease. The second class comprehends those who can have little hopes of escaping without particular pains, and therefore may be considered as naturally entitled to consumption. A brief comparative account of these two classes will pretty clearly lay open to us the course that nature follows in producing this dangerous disorganization of a viscus, so essential to life as we know the lungs to be. This being once understood, the manner of preserving them entire will be more easily understood.

We find by constant experience that there are certain chemical and mechanical irritat-

ing substances, which if applied to the parts of the body, disturb them in the exercise of their functions, or induce an incapacity to carry on those functions. Thus it has long been understood, and lately brought into general notice, that there is something in the atmosphere or soil of Egypt, which brings on an inflammation of the eye, and by a continued or more intense operation, occasions total blindness. I have heard it ingeniously conjectured, that this effect is produced by saline particles, which rise in the dust of the country, and violently stimulate the interior of the eye-lids, and the eye-ball. The idea was suggested, and is strongly corroborated, by the experience of Dr. Pallas, who describes himself as suffering exactly as the French and English soldiers in Egypt, when he was traversing the similarly impregnated soil of certain districts in the Russian empire, though mere flying sand did not materially incommode him. It is common enough at home to see dimness of sight, or total loss of vision, occasioned by quick-lime, carried by the wind into the eye. Certain fumes, as I shall presently have occasion to shew, will inflame the mucous membrane of the nostrils. The less exposed continuation of the same membrane, after it has

descended into the chest, is not so sensible indeed. But although rough substances, finely divided and drawn in with the breath, produce no immediate *pain*, they lodge in the moisture, and when constantly inhaled, excite an inflammation, which injures the texture of the membrane, and spreading into the substance of the lungs, produces a train of symptoms that always end fatally. The most striking example of this species of injury is afforded by one of the processes in the needle manufactory. It is that of *dry grinding*, by which the needles are pointed. The persons employed in this labour are universally, in a short time, affected with the symptoms of approaching pulmonary consumption. They go on coughing till they either spit blood, or a thick substance, having the appearance of matter. They decline in flesh and strength, and scarce ever survive to the fortieth year*.

In behalf of children, bound apprentices to manufacturers of needles, it is stipulated that they shall not be employed in this pernicious branch of the business. Indeed its effects are so notorious, that the manufacturers are said

* Memoirs of the Medical Society, V. 90,

to find it difficult to engage hands for pointing the needles. The lure of high wages is absolutely necessary. These enable the miserable victims to drown their sufferings and the sense of their danger, in intoxicating liquors.

There can be no doubt whatever as to the cause of the peculiar species of mortality among the needle pointers. Particles, worn off from the steel and the grinding stone by their mutual attrition, fly about the workshop. They are drawn in during respiration, and accumulate in the air-cells of the lungs. There they cause the substance, known to physiologists by the name of coagulable lymph, to be thrown out by the secreting vessels. By this coagulable lymph, and by the thickened mucus, the particles are cemented into small balls. In the early stage of the disease, mucus only, or mucus mixed with blood, is expectorated. But the expectoration changes by degrees, as in other consumptive cases. Purulent matter comes up, and it is very often mixed with the concreted metallic and earthy powder.

There does not seem to be any thing in the latter stages of the disease, by which it is distinguished from consumption, induced by other causes, though indeed practitioners

of medicine might require a fuller description of the state of the lungs after death, than is to be found in any account with which I am acquainted.

The workmen are said to be fully apprized of the end that awaits them, and in despair to neglect all means of relief. Without doubt, the feeling reader will be shocked at the infatuation of these poor wretches, and still more, when he is told that no attempt appears to have been made to preserve them by a guard before the mouth and nostrils. But the self-neglect of the workmen, and the unconcern of the masters, are not phenomena confined to the needle manufactory. We shall find them universal, wherever there is danger of pulmonary consumption. No wonder, therefore, they should occur amid groups of the most abject of human beings, under the total absence of mutual affection, where one party is solicited by a temptation, which ignorance can seldom resist, and the other, rendered insensible to all the motives of humanity, by desire of gain.

An immense list of artisans of different name, whose labours are carried on amid the floating particles of earth and metals, might be subjoined to the needle-grinders. In France, the pulmonary affection of the work-

men in plaister of Paris and marble, has acquired a peculiar name. It is called *maladie de grès*, or *maladie de St. Roch*. It seems to vary in no material respect from that which is so general in this country. Its course is the same. After death, the substance of the lungs is found indurated and full of tubercles. There are adhesions of the lungs to the membrane lining the ribs, and often one entire lobe of the lungs is destroyed by suppuration.

The softer dust, that arises during the fabrication of various animal and vegetable substances, is equally capable of bringing on a fatal irritation of the membrane, investing the air-pipes. Flax-dressers may be quoted as an instance. But all those labourers, who live during a great part of their time in an atmosphere, charged with floating animal or vegetable filaments, and even with dust from animal or vegetable substances, are subject to serious complaints of the chest, either of the acute or chronic kind. Consumption is the reigning malady. Nor is even the mild influence of the climate of the South of France sufficient to counteract this sort of irritation. The girls who come fresh from the high and airy district of the Cevennes, to perform the various operations in

the silk manufactory at Nimes, from the preparation of the cocoons to the spinning of the silk, suffer like our flax-dressers. Even in a few days, they are described as losing their bloom and all their vivacity. They are seized with a dry cough, by which they soon come to be continually harrassed. They complain of oppressive pain in the chest. Fever often succeeds, and they die consumptive.

On referring to various articles in the statistical reports for Scotland, it will be seen that this is very much the history of the girls who employ themselves so much in spinning in that country. All these are the effects of disorder in the functions of the lungs. It is more than probably the office of this organ to dye the white globules of the chyle into the red particles of the blood. This process being interrupted, no wonder the roses of the cheek should wither. This, though a very efficient one, is indeed not the only cause of that languid air which interests the spectator so much for young people, when their health begins to decline. For if the organs, that are destined to prepare the chyle, do not send it to the chest in a proper state, it cannot be converted into good blood. Even Mr. Bouz-

TON's mint cannot stamp the unmalleable metals into beautiful pieces of coin.

The readers of these essays may think the preceding facts, foreign to their own situation. But they are, in truth, as will immediately appear, essential to the formation of clear ideas on the present subject; and it is only on opinions founded upon such ideas, that we can depend for any permanent regulation of conduct. Much more than half the ravages of consumption depend upon the general want of such opinions.

In passing under review the different orders of phthisical mechanics, it would not be impossible to fix upon a groupe, which should connect those who suffer from hard and coarse powders, with the case of invalids so delicate, that they almost faint, if by chance they enter a room newly swept, and scarce inspire a particle of dust, except what the summer winds brush from the surface of the earth. Among the variety of workpeople, employed in the preparation of materials for the ornaments of dress, there would, I imagine, be found a number, whom confinement and much sitting concur in disposing to consumption, though the disorder is immediately provoked by irritating particles, deposited upon the mucous membrane. Perhaps, were

either cause removed, many would be preserved who now perish. Without the dust, which they so frequently breathe, even their feeble lungs would continue sound; and persons of stronger chest would breathe the soft floating particles, of which this dust consists, with impunity. It is certain that the phthical race of carpet-manufacturers, taylors, lace-weavers *, and others employed in a like manner, must draw into the chest a considerable quantity of linen, woollen, silk, and cotton fibres; and why should not these occasionally produce upon their peculiarly susceptible and delicate mucous membrane, the effect which similar substances produce on such as breathe them more freely and more constantly?

* 'A Arras, les dentillieres, dont le metier exige qu'elles soient toujours courbees, se plaignent ordinairement de la poitrine et de l'estomac parce que ces parties essentielles se trouvent dans une gene continuelle. Ce metier est si pernicieux pour la santé de ce sexe delicat, qu'on voit la plupart des jeunes filles, arrivees a l'age de l'enjouement et des plaisirs, le passer sans gaiete, et perdre en peu de temps, la fraicheur de leur teint, l'eclat de leur coloris, et la vigueur de leur temperament; souvent etre attaquées d'une toux seche presque continuelle; se plaindre des douleurs sur le sternum et le long des cotes; etre vivement oppressees, manquer d'appetit et tomber enfin dans la phthisie.

RETZ.

The opulent sufferers from consumption, and the artists who spend their day in warm, close rooms, free from floating particles of any sort, belong to one and the same class. All such artists are peculiarly subject to consumption. The confinement alone is sufficient to generate the propensity, as we find in shoemakers, without a particularly warm temperature. Confinement is sufficient to induce consumption in the ox kind, although by no means predisposed to the disorder. But with heat it acquires a double efficacy. Thus LEPECQ DE LA CLOTURE, a physician of Rouen, who has particularly attended to the paper-makers there, informs us that these artisans, (who begin to work about two in the morning,) have a flabby skin, a sallow complexion, and every appearance of feebleness. They are exceedingly liable to complaints of the chest, and very commonly die of pulmonary consumption. The atmosphere they breathe is constantly full of warm vapours. Mr. Carlisle, surgeon in London, in a letter to the author, relates of the gilders in that city, who work in heated rooms, and are often induced to expose themselves to damp and cold, that not less than six out of seven are said to die consumptive in their apprenticeship.

If we raise our view from the lower to the higher classes, we shall here perceive that it is upon the lilies of the land, that neither toil nor spin, that the blight of consumption principally falls. Were a table to be drawn out, exhibiting the result of an accurate and general enquiry, the females, who live without labour, would occupy a station, not exceedingly remote from the manufacturers, destroyed by breathing flint and steel *. I have very little doubt but they would come next to those, who have been described as suffering from gross and palpable irritants of the smoother and softer kind.

To understand the gradation of cases from the wretched needle-pointers to the pulmonic patients, whose apartments are filled by an atmosphere where scarce a moat is discernible in the sun-beams, it is necessary to

* A physician of Vienna considers the dust of the roads, as a cause of consumption. “ This holds especially of
“ those great cities, which are surrounded by distant sub-
“ urbs, to which unpaved roads lead. Working men are
“ often obliged to travel from the suburbs to the city once
“ or twice in a day. - - - It is particularly bad when they
“ are forced by hurry to walk fast, or when they do so to
“ get sooner out of the cloud of dust. For by their deep
“ and frequent respiration, they must inhale much more
“ dust than in going gently.”

remember that consumption may be induced in two different ways. The first is by the constant operation of violent causes, where there is no more predisposition than the structure of the organs concerned necessarily brings with it. The second is by the operation of slight causes, where there exists a strong predisposition. Here the habit compensates for the inferiority of power in the immediate agents. Nor does it seem essential that there should be received hard angular or sharp particles into the nostrils and air-pipes, in order to induce any common disease, of which the air-passages are susceptible. I am acquainted with a person, in whom a pinch of ordinary snuff will induce sneezing in the first place, as he is not an habitual snuff-taker, and afterwards a genuine catarrh. His first account of the phænomenon was, that *a pinch of snuff always opened his head*. His conception seemed to be that there was a reservoir of mucus somewhere above the nose, which the operation of snuff occasioned to be in part discharged. I did not comprehend the circumstance clearly, till after some explanation. But this is somewhat singular. There are acrid substances which will immediately cause violent sneezing in every person, and leave a catarrhal affec-

tion behind in many. Nay, the oxygenated muriatic acid, which cannot be supposed to act by any angular points, will produce long-continued sneezing, and in some individuals a perfect artificial catarrh. M. Guyton-Morveau, on smelling to a phial of what he terms his *extemporaneous oxygenated muriatic acid*, was seized with “a sneezing, which held him constantly for several hours.”—(*Moyens de desinfecter l’Air*, p. 135.) In M. Vauquelin and others, the effects of this active gas were perfectly analogous to a common cold. There was the sneezing, with which the latter frequently begins; the same disagreeable feelings about the head, and afterwards a similar copious running of clear liquid from the nose. During this defluxion, two ounces of mucus have been discharged in half an hour*! The subsequent

* Un resserrement et une gêne insupportable dans les sinus frontales et dans ces arriere-fosses nasales; l’eternuement suit de pres cette premiere action; bientôt il s’établit un ecoulement d’une liqueur limpide comme un chrystal. Les eternuemens sont quelquefois si promptement repetés qu’une sueur abondante couvre tout le corps. - - - M. Vauquelin craignoit l’hæmoptysie. Après que les symptômes les plus violens - - - sont calmés, il reste encore pendant plusieurs heures un resserrement, une espece de roideur insupportable dans toutes les parties, qui ont ressenti l’ac-

roughness and soreness were no less observed, and there came on the same impossibility of breathing through the nostrils from the thickening of the membrane, and afterwards the well-known, dense yellowish green discharge.—When the gas gets down into the chest, or when the affection spreads by degrees from the nose into the bronchia, a regular catarrh, with the symptoms proper to a cold in the chest, supervene. A huskiness or dry heat is first felt. A cough of several days' duration follows; then a hoarseness; the person loses his taste, grows feverish, and has that confusion or embarrass-

tion de l'acide muriatique oxygene. Lorsque l'écoulement s'arrete entierement, les fosses et les sinus du nez s'embarassent. Ils ne permettent plus le passage de l'air pour la respiration et l'on se trouve fortement enchiffrené. L'humeur s'épaissit - - - Elle se detache par masses considerables tres epaisses d'une couleur jaune verdâtre. Si la vapeur de l'acide muriatique oxygene a passe par la trache-artere, ou si son effet s'est porté de proche en proche jusqu'a cet organe, il en resulte un rhume de poitrine, qui a ses periodes regleés et constantes. L'on sent dans la poitrine une chaleur acre, la toux dure pendant plusieurs jours, la voix devient rauque, l'appetit diminue, et les alimens semblent ne point avoir de saveur. Enfin il y a souvent une fièvre assez forte, et un mal de tete sourd, qui brouille les idees et met l'individu, que l'éprouve, dans une position desagrecable pendant plusieurs jours.

ment of head, which is well known to sufferers from frequent catarrh.

But not only have the symptoms of catarrh been produced by chemical fumes, exactly as by a succession of atmospherical cold and heat, but a genuine consumption has been most distinctly observed to be brought on by these fumes. It is related by Dr. Fourcroy of an apothecary at Argentan that, finding his elaboratory too small for the process for making liver of antimony, he placed the materials in a vessel in his garden. After he had set them on fire, a gust of wind blew some of the smoke into his face. He was seized with a convulsive cough, which lasted for several months. The cough diminished in violence, by degrees. A slow fever, however, came on; the patient fell off in flesh, and finally died of a confirmed pulmonary consumption. It was not indeed till the fifth year after the original injury to the lungs. The distance of time, however, is far from being any objection to the supposition, that the fatal malady was occasioned by the volatile, pungent, sulphureous fumes. The patients' chest and general health appear to have been constantly affected from the very moment. And though this had not been the case, but intervals of apparent freedom

had occurred, the conclusion might nevertheless have been just. Analogous effects are every day observed from the vicissitudes of the elements; and on account of the very great distance of time, at which the disorder becomes incurable and the fatal event happens, they deserve more particularly to be pointed out for the benefit of a numerous class of consumptive invalids. The following is one, out of a variety of instances, which I have seen. A gentleman of North-Wales of a healthy race, robust habit, and good conformation, at the age of 37, caught a violent catarrh in winter, and from perpetual renewals, laboured under severe cough with expectoration for several months. His health, in other respects, continued good. He had no hectic fever. He did not decline considerably in flesh or strength. At the setting in of summer his cough left him, and he became perfectly well. The next winter he caught cold again, and suffered as before; and once more recovered in the summer. This happened for six following years. Only he found that, every successive winter, he more readily contracted and renewed his complaint. The seventh winter he became unwell as before. But in the warm weather he did not lose his cough,

On the contrary, he grew weak, thin, and feverish. His lungs ulcerated and he died, after a terrible struggle, of confirmed consumption.

That inflammatory affections of the mucous membrane are produced by changes of temperature in the air, and that damp, when applied to the body, does, as a cause of cold, contribute to the same effect, are circumstances, about which all the world are perfectly agreed. Nor am I now anxious concerning the mode of operation. The preceding facts are adduced in proof of a strict analogy between stimulating powders, exhalations of a peculiar kind, and atmospherical changes, in occasioning superficial disease in a particular membrane. We have seen that sharp particles and filaments, abraded from a variety of solid substances, occasion a fatal disease, which must begin on a part of the surface of the same membrane, and spread into the substance of the organ, to which that membrane is attached. We have seen, in one striking instance, that acrimonious vapours, which cannot stimulate by any points or edges, act in the same manner. And were more instances wanting, we might collect them in abundance from the laboratories of the chemist, and from particular

manufactories. It is a matter of universal observation, that consumption of the lungs is equally excited among the civilized inhabitants of various climates, by the vicissitudes of the weather. A *superficial* inflammation first arises, and on frequent repetition, or from some other circumstance, the mischief penetrates deeper, and renders the lungs unfit to contribute their share to the maintenance of life. That catarrhal coughs, acquired in the usual manner, do terminate in this manner, is denied by scarce any medical writer. Respecting the frequency of the event, indeed, there is considerable disagreement. But the present is not the moment for discussing that point. It is sufficient if the existence of the fact be allowed.

If a rigorous and variable climate be capable of inducing this fatal complaint, on whom must it principally exert its baneful influence? Unquestionably upon those, who by descent, by defective original conformation, and by peculiar habits of life, have a more than common tenderness of the parts, upon which the atmosphere acts. Those who inherit a title to consumption, should take the fate of their immediate or remoter ancestors as a fair and full warning. In cases where the death of the parent has happened

during the infancy of children, would it not be kinder to put them on their guard, than to attempt to conceal from them their danger? Who, on finding himself entangled in the snares of a relentless enemy, would not charge with cruelty the friends that foresaw the disaster likely to befall him, and forbore to make the disclosure?

The principal defect of conformation consists in too great narrowness of the chest, which occasions the shoulder-blades to stand prominent, like wings just raised from the body, not yet unfolded, though about to expand for flight. A long neck seems frequently to accompany this structure, as if the narrow chest had been lengthened or tapered out into neck, instead of being expanded into due breadth. The tokens of the scrophulous constitution are also very commonly observed to precede consumption. These (to enumerate them once more), are a sleek, fair skin, with turgid blue veins. I have already, however, explained that they are to be considered as signs of debility, rather than of any specific disease. Hence they will precede scrophula and consumption, or not, according to the climate, and the circumstances in which the individual is placed. As signs of debility, the physician must not

be complaisant enough to regard these as so many personal advantages, whatever may be the case with the poet, the painter, and the lover. In this country, they must be looked upon as foreboding consumption. The two opposite extremes of light and dark hair and eyes, are often observed in the consumptive. But if the chest is well-formed, and the body not slightly built, I look upon these complexional characters as very uncertain in their signification. The want of a free sweep in the ribs, and the consequent narrowness of the thorax, I regard as the most important of all personal indications. The bad condition of the bony case or cover, betokens a bad condition of the soft parts contained within.—Habitual bleedings at the nose in youth frequently accompany a narrow chest and long neck, and are justly numbered among the tokens of future danger to the lungs.

Nothing in life is more familiar, than to find the effect of descent and conformation, seconded by habit. To be sensible of this, only call to mind the detail of a lady's day. I do not mean merely that of a *fine* lady; but of the innumerable tribe of females in different circumstances and situations, who by right or courtesy, enjoy the title of *lady*,

in proof of their not being obliged to work hard for their subsistence. You will find them all just like so many divinities of Epicurus—not indeed basking upon clouds in the mild empyreal warmth of heaven, but fixed almost as immoveably upon well-cushioned chairs and sofas, in hot, close apartments. And if they resemble those of Epicurus in indolence, they will not be behind those of Homer in the tenuity of their diet.

Οὐ γὰρ σίλον ἐδουσι, οὐ πίνουσ' αἰθοπα οἶνον·
 Τούνεκ' ἀναιμόνες εἰσι — καὶ ἀθανάτοι καλεοῦνται.

They scarce partake of the coarse fare of mortals, and therefore they are without blood.— And are named immortals, adds the poet. But here the case is reversed. Our ladies, unable to receive and digest a proper quantity of aliment, are apt to fall farther short of immortality than their equals in society. They are scarce alive, while they continue to breathe: and, in numberless instances, a fiend, infinitely more cruel than the nightmare, makes a lodgment in the bosom; and finishes by strangling them, after he has oppressed them long. Effeminate men, of course, become the prey of the same malignant imp. But *men*, at least *young men*, cannot easily devote themselves so entirely to indolence,

as women have the misfortune to be devoted by our usages. They indeed make it up in a degree, but not compleatly, by wantonly braving the agents of destruction.

It is universally observed that the persons, who render themselves most tender by their mode of life, are most susceptible of the immediate disagreeable effects of a medium, much colder than common. They are also more susceptible of the variety of injuries, more or less permanent, which such a medium has its share in occasioning. The application of the fact to consumption in particular, as a disease that may begin from irritation of the surface of the mucous membrane of the chest, is attended with no difficulty. I have explained in the fifth essay, how damp and cold, applied to any part of the skin, inflame the mucous membrane by association, and bring on catarrh. As consumption is, at times, the unquestioned progeny of catarrh, the tender will be more liable to it from this and from all those other causes, by which the mucous membrane is affected, independently of the immediate application of hot and cold air in succession.

*PHTHISICAL DISORGANISATION
OF THE LUNGS.*

The examination of the bodies of the dead has greatly contributed to elucidate the destructive operation of hard, rough particles upon the lungs of the more robust, and of slighter powers upon those of the weak. In a great majority, it would appear, of the invalids who perish by consumption, the substance of this organ is found every where studded with roundish bodies, denominated *tubercles*, from their resemblance in shape to certain roots (*tubera*.) They are dense, light-coloured bodies, at first not larger than the heads of small pins. They are frequently found of the size of garden peas, and, as it is supposed, by the consolidation of a whole cluster they come to form masses very much larger. In the inside of the more advanced tubercles, is found matter, inclosed in the yet entire circumference of the tubercle, as in a bag. This matter by degrees finds its way into the air-pipes, and is what we see expectorated in confirmed consumption. The matter is sometimes of a peculiar consistence, being grumous or curdy, as in scrophulous sores. It is frequently without a mixture of

more solid parts, and such as issues from a common sore.

Sometimes a substance, resembling tubercles, is found to occupy a considerable space of the lungs, but having no defined figure. It has a degree of tenacity like a scrophulous gland, just beginning to suppurate.

Tubercles are not peculiar to the lungs. They are very frequently formed in the liver, and often in the uterus, and sometimes, though very rarely, in the spleen and the kidney.

The origin of tubercles, like that of the other products of the animal organization, is obscure. The physiologist cannot say by accession of what materials these concretions are formed, as the chemist can explain the composition of a neutral salt. But the first, which is the most interesting step, in their formation, can be assigned with a high degree of probability. And by making a proper use of this fact, all that perplexity, which has hitherto so universally prevailed concerning the connection between tubercular consumption and scrophula, may be removed. The explanation belongs to this place, because it will be productive of some advantage to preventive medicine, though it may not, at the

present moment, forward us a step in the cure of confirmed consumption.

Dr. Desgenettes, from the dissection of a stone-cutter, in whose lungs he found a number of stony concretions, was led to believe that these concretions were formed by particles of calcareous earth, taken up by the absorbents from the surface of the mucous membrane. In one lobe of the lungs, he says he met with lines, consisting of little stony grains, included in a peculiar membrane. One of these lines, he remarks, made up of three such grains, and near four lines in length, exhibited the form of a lymphatic vessel. Hence he thinks he has a right to conclude that fine calcareous particles are very often absorbed; that they are thrown out into the cellular substance, where they form calculi, and from the destruction of parts they soon occasion, they afterwards get into the air-pipes, and are expectorated.

Whatever may be the fidelity of this observation, to which a chemical examination of these pulmonary concretions is wanting, it is very certain that tubercles may be formed by introducing foreign matter into the lungs, and that a true consumption will regularly follow the formation of these tubercles. Dr. Haighton, one of our most

ingenious physiologists, ascertained this very curious and important fact. He injected running quicksilver into the crural vein of a dog. The fluid metal, being circulated along with the blood, found its way to every part of the body. The animal did not seem to be disagreeably affected during the first day. It then became feverish, and afterwards laboured under difficulty of breathing. A cough succeeded. These complaints went on increasing till the death of the dog. In the lungs were found tubercles, of which many contained matter. That these tubercles had been produced by the injected mercury, was demonstrated by cutting into their substance, from which it appeared that each contained a particle of the metal. This experiment appeared to me of too much consequence to remain unconfirmed by repetition. I accordingly caused two puppies to be procured. Into the crural vein of each, at the age of about six weeks, running mercury was injected. The animals appeared not to suffer in the least for nine days. On the tenth, one was killed, and, on examination of the lungs, tubercles were discovered in considerable number, each of which, as in Dr. Haighton's experiment, contained a globe of the mercury. A few tubercles at the

edges of the lungs, though not equalling a garden pea in size, contained purulent matter. On this, which is the fourteenth day, the remaining animal appears sluggish and indisposed. The pulse is quicker than in another of the same litter. The difference of time, at which the animals appeared to be affected, may have depended upon their difference of age, if that employed for the original experiment was full grown, and if we may suppose that the young of the dog kind are less susceptible of this particular sort of pulmonary disease in the same proportion as infants appear to be, in comparison with the adults of the human species.

The probable influence from these facts is, that tubercles originate from a small particle, in most cases thrown out by secreting vessels during a particular kind or degree of inflammatory action, and that this by its stimulating quality maintains the very action, by which it was thrown out, in the same manner as the globule of quicksilver does, till the new product of disease is sufficiently advanced to form matter within its substance, and to burst into the ramifications of the bronchiæ.

Nothing is more common, in certain deviations from the healthy state, than for the

vessels destined to throw out liquids for the moistening of the surfaces or of the interstitial cells of the body, to secrete substances, having different degrees of tenacity, even to a stony hardness. Calculi are occasionally formed in the lungs in place of tubercles, and sometimes in the same subject and at the same time with tubercles. In a Wallachian horse, Dr. Camper found the lungs full of small, round stones, of which some had occasioned little abscesses.

Inflammation, excited in one spot, often diffuses itself gradually into the contiguous parts. This is one of the most common facts in pathology. It is no wonder then, that when the mucous membrane, investing the air-pipes or ramifications of the bronchiæ, is inflamed, the invested parts should become inflamed too. And then it is that the formation of tubercles *often* begins.

But this event depends probably upon the degree of superficial inflammation, and certainly, under ordinary circumstances, where irritating powders are not concerned, it depends upon the habit of the party suffering from inflammation. In what kind of habits tubercles are most likely to be the result of inflammation, we have no means of knowing but by reference to the persons of the con-

sumptive. This, if we leave descent from consumptive parents out of the question, will lead us to the feeble and the delicate in general. Among the feeble and delicate, we shall find those of scrophulous constitution most subject to consumption.

In the natural history of tubercles, no circumstance is more singular than that they should not unfrequently exist in the lungs without injury, and even without inconvenience. For they have been found in the lungs of malefactors, executed in full health, and of persons, who have had no pulmonary symptom.

I conceive this fact in the following manner. Severe or repeated catarrhs, or else hard particles, occasionally, not habitually inhaled, shall produce the tubercular inflammation in persons little disposed to it by the nature of their constitution. The inflammation shall subside, and there being as little disposition to supply the materials, by which they are enlarged, as to form the central portion, they remain quiescent: and if death from some other cause take place before the mucous membrane again suffers an equal degree of irritation, neither the lungs nor the constitution will sustain any sensible injury. But in case of new and severe

catarrhs, the tubercles will be enlarged by the inflammation of the adjacent substance of the lungs, and matured into abscesses, which when arrived at a certain size, discharge their contents into the air-pipes, and occasion consumption. In disposition to form tubercles, in the tendency of those tubercles when formed to enlarge, inflame, and suppurate, and to affect the constitution, when supplicated, the difference between different individuals appears immense. Dr. Camper says that the horse, whose lungs were full of round calculi, some of which had produced abscesses, had no cough nor any difficulty of breathing, even when put out at full speed.

RELATION OF SCROPHULA TO CONSUMPTION.

It is observed that consumption is particularly apt to rage in scrophulous families. It is also observed that many persons fall into consumption, whose ancestors have been exempt from scrophula, and who themselves have had neither any mark of the scrophulous constitution, nor any positive symptoms of the disorder. These two observations medical philosophers have not been able to

reconcile *. Some have prudently contented themselves with addressing the difficulty to future reasoners. Others have used their pen, as Alexander did his sword, to cut the knots they could not untie. They have assumed that the existence of consumption—of tubercular consumption at least—was proof sufficient of the existence of scrophula, though all other evidence should be wanting.

A degree of resemblance in form between tubercles and lymphatic glands, occasioned these bodies to be confounded, at a time when anatomical knowledge was less accurate; and had tubercles proved lymphatic glands in a state of disease, the conclusion that tubercular consumption is always a scrophulous disease, would have been inevitable. But it is now perfectly understood that the substance of the lungs is destitute of glands of this description; and from all the facts it appears that tubercles are not pre-existing organs, changed by disease, but to all intents and purposes new concretions, like gall-stones and the calculi of the kidney or the bladder. The formation of tubercles in the manufacturers formerly enu-

* A treatise on Consumption, by Dr. Read, contains some of the best ideas we yet have on this difficulty.

merated, many of whom are of a temperament as opposite as possible to the scrophulous, is a sufficient refutation of an opinion which rests upon a foundation little firmer than the following argument. *Because many scrophulous persons become consumptive, therefore all consumptive persons are scrophulous.* It does not appear that the least difference has been observed between the tubercles, occasioned by the inhalation of foreign bodies, or by repeated catarrhs in the healthiest persons, and those of the most phthisical constitution. And when tubercular consumption can be excited in any dog, taken at random, it must be in vain to think of a necessary connection between scrophula and this species of consumption. Before these facts were discovered, to say that tubercles alone were sufficient evidence of scrophula was at best begging the question. But now the negative is demonstrated.

It remains an undoubted truth, that the slightest exciting cause is more apt to produce consumption in the scrophulous than in others. And independently of external causes, those who labour under the glandular variety of scrophula, are exposed to a peculiar kind of danger. Enlarged glands, from the unexplained, but unquestionable

influence, which living parts exert upon one another, dispose to the formation of tubercles. This process in the lungs is much more apt to be excited about puberty and afterwards, than in earlier life. The progress of disease toward the chest may be observed upwards and downwards; from the mesenteric glands in one direction, and from the lymphatic glands that dip under the clavicle in another. It sometimes, but less frequently appears, that the glands become scrophulous from the agency of advancing tubercles. I have several times known lymphatic glands on the outside of the chest begin to enlarge, after all the symptoms of tubercles had, for some time, made their appearance. And so exact is the sympathy between lymphatic glands and tubercles in some scrophulous subjects that, after death, I have seen both filled partly with purulent and partly with calculous matter. The rules of caution, deducible from the preceding disquisition are equally simple and important.—*No person can flatter himself with being entirely exempt from consumption. No one should therefore wantonly expose himself to the exciting causes. The most perfect freedom from the scrophulous taint is a very small ground for confidence, where there is any other reason for apprehen-*

sion. *But the scrophulous ought to be particularly on their guard.*

Catarrhs, it should be observed, are particularly apt to lay the foundation for consumption in scrophulous habits. For in these the substance of the lungs is peculiarly apt to run into that sort of inflammation which produces tubercles. It is the observation of a physician, whom Tissot terms very able, *that colds cut off more invalids than the plague* *. From common observation, and the titles of many popular tracts, it would appear that the idea of consumption being frequently produced from catarrh is very general. But at present we are not acquainted with the proportion among these sufferers, that are not scrophulous. A majority of the consumptive patients I have seen above thirty, have been free from glandular affection, and all propensity to it. It is exceedingly common to find feeble young people attacked in spring with an inflammation of the chest, more severe than an ordinary catarrh, and approaching to what is commonly called *pleurisy*. This complaint, unless carefully treated, ends in consumption, though the constitution be free from all suspicion of taint. In some

* *Les rhumes emportent plus de malades que la peste.*

places, scrophulous affections are thought to be less frequent, without the least apparent diminution of consumption. For example, “ the scrophula has been suspected as the “ most general cause of consumptions; but “ this disease is less common in Chester than “ in most other places. - - - Very strong evidence could be adduced that the most “ frequent and most fatal cause of consumptions, in this town and neighbourhood, is “ catching cold, which occasions a cough, “ that is entirely neglected for many weeks “ or months, and is never supposed to be “ dangerous, till it becomes desperate.”—

(*Haygarth, Phil. Trans. LXIV. & LXV.*)

The numbers given are as follow :

Buried in all.	Consumption.	Convulsions.	Fever.	Small-Pox.
In 1774—379	62	76	23	16
In 1775—352	73	69	34	1

In the former of those years the number 26 stands against asthma, and in the latter 16. It is not impossible but some cases of consumption may have been referred to asthma. And of the term *convulsions*, it seems that at Chester the nurses are full as prodigal as in London. For “ when an infant is seized with fever, or almost any “ other disorder, if there be any distortion “ of features, expressing pain, or any irre-

“ gular motion of the eyes, nurses always
“ denominate the disease, *inward convulsions*.”
The disorders of children were left to be named
by women, medical practitioners being more
rarely consulted in their cases.

Not to suffer a catarrh to go on without
medicine above two or three weeks, is a
common piece of advice. But it is safer
not to suffer it to form, and if it have
formed, and be at all violent, we should pro-
ceed to its removal without delay. We have
a remedy in the fox-glove alone, which suc-
ceeds at once in the great majority of *colds*.
We have powerful auxiliaries, when they are
required: so that consumption from catarrh,
measles, small-pox, and hooping-cough, (of
which latter the present season threatens to
be productive) ought to be an event almost
unknown. The same may be said of chronic
catarrh, of asthma, and of the various other
evil consequences of a *neglected cold*.

If those, who cannot take sufficiency of
sustenance for want of exertion, and who
cannot exert themselves properly for want
of sustenance—to whom hunger, fatigue, and
sleep are never sources of pleasure or refresh-
ment—if such persons are most subject to
consumption, it will be easy to conjecture
who are the most exempt. And circum-

stances or exposure being alike, where the animal powers are least suffered to dwindle from disuse, there the organs of the chest will be found to remain freest from ulceration, and the constitution from the terrible effects of such ulceration. To enumerate those who enjoy this privilege, would be to give a list of the professions, callings, and occupations that are *carried on in the free air, and that fully supply the means of answering the calls of appetite*. Butchers and fishwives supply curious examples of this exemption, as may be seen in my larger essay on consumption. Whoever will fix upon that part of the inhabitants of Great Britain, in whom these two conditions unite, will find that he has selected the least phthisical from the whole mass; and though the excesses of these lead to consequences sufficiently deplorable, they escape the extreme misery, attending the gradual destruction of the organ, by which we breathe.

I do not speak of the origin of consumption in high inflammatory pleurisy, when blood-letting is neglected, nor of the effects of blows on the side, or of severe courses of mercury and the like. In such cases prevention lies with the medical practitioner; nor is there any interval for domestic mea-

tures of safety. I pass over the cases of slow pulmonary ulcers, towards the formation of which tubercles are not the first step. Such a disquisition I consider as needlessly subtle for the readers of these essays. I shall only add a caution not to let chronic catarrh degenerate into consumption. This caution more particularly respects elderly people.

VOCAL EFFORTS.

A considerable effort in singing or speaking will often bring on a spitting of blood, even when the chest is not originally weak. The celebrated composer GRETRY, brought on a pulmonary hæmorrhage by singing; and he has given to those who may meet with the same accident some advice, which the British physician will hardly confirm*. The

* *Memoires*, Paris 1789. He objects totally to bleeding, which perhaps is solely or principally adviseable in this kind of hæmorrhage from violence. You are to lie on the back two days and two nights without stirring or speaking—not bad counsel in such a case.—But he says that the free expectoration of coagulated blood is a proof that the cicatrix has been formed.—Alas! the closing of a ruptured vessel is no security against abscess or tubercles, without stronger measures than he advises; and the danger of perishing from loss of blood is very small. Few attacked

injury in these cases appears to arise in two ways. A quantity of blood is driven by an effort or a blow into the substance of the lungs, and there occasions the formation of a large abscess or imposthume, or else coagulable lymph is effused, inflammation commences in a number of points, and a formation of tubercles, with all their bad consequences, takes place. The following very distinct case, recorded by a foreign observer, shews how the abscesses are produced. A labourer's infant, about seven months old, was put into the hands of some neighbours, by its mother, who was obliged to be from home almost all day. The child fell into the most violent fits of crying, and its mother, on her return, found it quite altered. The face was almost black, and it was still fetching deep sobs. The terrible agitations which it had undergone on being first forsaken, had subsided. But it appeared to be oppressed and coughed much, which was

with spitting of blood die in this way ; and few even sustain serious injury from the quantity of blood lost.—If your chest is heated, which you will know by a short, dry cough, proceeds the musician, take syrup of vinegar in water—if chilled, a glass of wine after dinner.—Excess of refrigerants once brought on my spitting of blood for five days.

not the case in the morning. So it was supposed to have taken cold. But after a little time, it was observed to cry and to suffer in being laid on the right. Two months afterwards, febrile exacerbations came on and went off from time to time. The cough and the oppression increased, progressive emaciation took place, and now the little invalid had a burning skin every evening after slight chills. The cheeks were of the most beautiful red, the palms of the hands, and the soles of the feet, particularly hot. As the symptoms grew more violent, the cough was attended with a sound as of something to expectorate. Diarrhœa succeeded; the loss of flesh was such, that all the windings of the intestines are said to have been apparent through the skin of the belly. The child was suckled, and its appetite continued good to the last gasp. It died after eleven months of suffering. On opening the body, a large abscess was found in the left lobe of the lungs; the right lobe was sound.—There cannot be an example of the effect of inordinate exertion, more distinctly marked as to time and circumstances. It was supposed that an effusion of blood had taken place into the substance of that side of the lungs, where the disorder was discovered after death.

Some effusion there probably was, as the affection of the chest never went entirely off from the hour it commenced.

The existence of tubercles where consumption has begun in spitting of blood, is a fact of perpetual occurrence. But whether blood, thrown out into the cellular substance of the lungs, as well as into the air-pipes, directly promotes tubercles, or whether they arise from some concomitant irritation, the time at which the short dry cough, and other signs of their existence are observed, often coincides sufficiently with their production by quicksilver, thrown into the blood-vessels.

After these explanations it will be readily enough conceived how singing and similar exercises will excite an inflammatory action, which shall terminate in consumption; and this independently of all spitting of blood. I have several times been consulted for invalids, in whom a pain of the side had come on while they were learning to sing, and in whom it disappeared on relinquishing the practice. It is sometimes thought that efforts of the voice strengthen the chest. But to escape hazard, they should be begun with great moderation, and increased with great caution. Fatigue should always be avoided; nor can there be much chance of benefit from

bringing a single part now and then into play, under the continuance of a life that debilitates the rest of the frame.

CORRECTION OF THE PHTHISICAL TEMPERAMENT.

The difficulty here is to create a resolution, not to give proper directions. If a compassionate spectator were to find a cluster of human beings, employed at one of the above-mentioned deadly occupations, how would their hard dry cough, their flying feverish heats, and shooting pains in the chest, alarm him for their fate; and it is easy to conceive with what warmth he would urge them to fly to the medical art for relief, while it was yet time, and afterwards to turn their hand to some safer labour. The monitor may be one of those who equally needs admonition against similar danger. And who does not wish that the party admonished could but put into forcible language the power of choice, which a certain degree of opulence bestows, the superiority to temptation, which a knowledge of consequences ought to confer; and all those other circumstances which render blindness to situation, and perseverance in destructive habits, so much more

inexcusable in a person of education? How much less gross must the infatuation of the mechanic appear on a fair comparison? But alas! can one hope that the clearest prospect of their common end would move the one to quit his murderous habits, any more than the other his murderous trade!

To those who will listen to counsel, I would recommend it to begin their measures for preventing consumption from the very cradle. To the puny progeny of a puny, consumptively disposed mother, I would forbid the mother's breast. Without supposing that the seeds of disease could be conveyed by suckling, I should prefer the milk even of a healthy cow to that, secreted by a gland, which probably partakes of the constitutional feebleness. With cow's milk, if a wet nurse could not be procured to my satisfaction, I would alternate diluted gravy to as great extent as observation of the infant's progress should teach me was suitable. I would join bathing at such a temperature as the countenance and habitudes should indicate. I would employ gentle friction of the extremities, and even of the chest and stomach, that the system might be cherished with heat of its own producing, and animated by the vigour of its own actions. And, in all respects I would bring

into practice the principles, already laid down for the benefit of weakly constitutions. Chills, confinement, sedentary occupations, pressure from dress, and employments that throw the body into constrained, uniform attitudes, I would carefully shun.

The dumb-bell I consider as a miserable substitute for running, digging, working with tools, and those other exertions that engage the mind, while they put the limbs into motion. Curious sports, such as archery, have not a permanent interest. They do not incorporate into a system of actions for life. *Task-exercises*, in my opinion, hold the same proportion to health, as the castigations of penitents to piety or virtue. Neither have they, at the moment, that salutary effect, which employment, connected with interesting ideas, always has within certain bounds, and when it fills a proper, that is, a large portion of a child's time. It has been my lot to see many young ladies, who have wielded the rope with great assiduity, but I have seen no one of much delicacy of habit, who has skipped herself into good health. Sometimes skipping has appeared to accelerate curvature of the spine, and to increase that feebleness, which is the forerunner of consumption. It is a great mistake to suppose that

occasional efforts repair any part of the mischief which habitual indolence produces. A girl, who does not move enough to keep herself warm in common, but heats herself every now and then by dancing, will, I believe, be weaker in the long run, than if she never started out of her indolence. The more reduced the powers, the more cautiously does exertion require to be apportioned to them; and this rule holds through all the gradations, from the convalescent in fever that cannot bear all at once to be raised upright in his bed, to the phthisical and the nervous, who are fluttered with palpitations, dissolved in languor, or teased with headaches, after every movement a little more brisk than usual.

IMMINENT DANGER.

If thousands and tens of thousands, now fast approaching to maturity, have been brought up with entire disregard to their constitution, it may be collected from the preceding statements what numbers are, at this moment, on the eve of being seized with fatal affections of the chest. Of how much importance then is it that the chiefs of families should be made acquainted with the appearances, most probably denoting the

commencement of that sort of pulmonary disorganization, which in a few months or a few years will be followed by so highly dangerous a disorder !

The aptitude to consumption is become so great in modern times, if it was not always so, that we daily see complaints apparently the most remote, terminating in this. In delicate habits, therefore, almost any indistinct indisposition, after the period of childhood, especially if it continue for any length of time, ought to be suspected. Should it be accompanied by falling off in flesh, a situation is indicated, which will not admit of delay. We frequently observe, in fact, (and I shall quote a clear instance below), that consumption can be clearly traced back to such beginnings : and we may perceive by the light of physiology, faint as it yet is, that these consequences very naturally result from an obstruction to the action of the atmosphere on the blood. That fluid will probably be impoverished ; and there will be less substance added to solids, and what is added, may be of a less healthy quality.

These and other circumstances, which occur in a variety of instances and call for medical interposition, are faithfully copied from nature in the following letter of consultation.

“ I am desirous of your sentiments upon my

“ daughter’s case, which possibly requires
“ nothing more at present than attention
“ to prevent those consequences, which may
“ arise from her spare habit and delicate
“ constitution. She is 14, and not only thin,
“ but narrow-chested. Her spirits have al-
“ ways been unusually good. She has had
“ no complaints but the usual ones of child-
“ hood. She has had little appetite for animal
“ food, always preferring bread, vegetables,
“ and fruit. In warm weather this prefe-
“ rence is particularly marked. Finding her
“ greatly relaxed last summer, I had her to
“ use first a cold, and afterwards a temperate
“ bath. Within the last six months, she has
“ lost much of her strength and spirits, with-
“ out any specific disease. She complains of
“ extreme lassitude. The least exertion of
“ body or mind is disagreeable to her. She
“ complains also of sickness upon first rising
“ in a morning, and at no other time. Of
“ late she has found a sudden flushing of
“ heat come over her, and she sometimes
“ feels a slight oppression upon her breath,
“ but not often. Of her pulses I can judge
“ no farther than that they are always
“ quicker, and often much more so, than in
“ either of her brothers. Within the last
“ six weeks she has rode a good deal, and
“ the exercise seems to agree with her, though

“ she feels fatigued after it; but on lying
“ down a quarter of an hour, the fatigue
“ goes off. Her general habit of body is
“ such as appears to require opening medi-
“ cines, and at particular times she con-
“ tinues unwell too long, and is much ex-
“ hausted.”

Succeeding chills, a burning skin, a flushed countenance, and quicker respiration, ought to alarm the unprofessional. Nor will it be difficult for any one to ascertain the difference in the frequency of the pulse at different times of the day, and after such an exertion as walking up one or two flights of stairs. It should also be enquired, whether the surface of the body be in a burning or a moist state on awaking in the morning. These symptoms do not indeed demonstrate the lungs to be in a bad state. But in young men, that there are tubercles, and those tending to suppuration, is infinitely the most probable supposition. In young women, under the absence of any complaint peculiar to the sex, it is also the most probable.

It shall often happen that no expectoration but of a little frothy mucus, which is absolutely forced from the membrane by coughing, shall take place till the lungs become really ulcerated. But sometimes there shall be a pretty free expectoration of phlegm for

some time before. It shall take place principally in the morning; and this ought to add to the alarm, when there are other causes to excite it. Indeed, habitual excess of phlegm alone, about the phthisical age, calls for attention, and whoever sets about corrective measures, does no more than what prudence requires. The great danger which it is intended to obviate is highly probable; the present evil, though seemingly slight, very certain.

When there are shooting pains, or uneasiness in the chest of a subject, in any other respect suspicious, and when these feelings depend on no other manifest disorder, *the bill ought to be found* without scruple, and the case remitted to a person or persons, competent to decide upon the whole of the evidence. When there is a cough, with any degree of feverishness, and a difficulty of lying on one side, there can scarce remain a question or a doubt. Consumption may be considered as fairly formed, and the object will be to hinder its proceeding to the second stage, when it is characterized by purulent expectoration and regular hectic fever, in addition to the preceding symptoms.

It is true, and it might be interpreted as want of candour, to conceal, that once in a great number of times, the most intelligent

physicians, after full and repeated examination, shall confidently consider an affection as genuine pulmonary consumption, in which examination after death * shall prove the

“ * It is not long since I was present at the dissection
“ of a certain person of quality, who was pronounced consumptive by various experienced physicians. They of course expected to find the lungs ulcerated; and they supposed this to be the case also with the liver. What was their astonishment then on finding both the lungs and liver in the best condition? A fleshy excrescence, however, of vast size, was found attached to the intestines, by which these and the other viscera of the lower belly were violently compressed. - - - It was recollected that the patient had had a bad fall twenty years before, since which he had complained of pain in his right side. - - - Hence we see how necessary it is to pay attention to every symptom and to the cause preceding it, if we would judge with accuracy of complaints, and treat them properly. For we often find disorders, wearing the appearance of true consumption, with cough, pain of the chest, difficulty of breathing, and hectic heats, where the lungs are perfectly sound.” (Marx, v. d. Schwind-lungensucht ss. 89.) - - - “ A mason, as he was at work, was obliged for some instants to sustain a very large stone, which would have carried him along with it in its fall. Though speedily relieved, he had immediate spitting of blood, with pricking pain in the middle of the spine. Bleeding and other means restored him in all respects, except that there remained an obscure pain in the same spot. But his strength gradually declined; he lost his appetite; he had continual cough, either dry or with expectoration; he fell off in flesh, and after complaining all the time of painful spasms in the chest with expectoration of hectic

lungs to be untainted. But these deceitful cases are generally fatal, if neglected, and therefore do not less require the earliest interposition of the medical art; and probably they would sometimes be cured by that general and local treatment, which is most efficacious in consumption of the lungs. The use of such cases out of the profession is to deter the friends of invalids from taking upon themselves to decide ultimately in an affair so dangerous and obscure, as to perplex and baffle the most sagacious and experienced of the faculty.

FALSE OPINIONS GENERATING FATAL DELAYS AND ERRORS.

In an *almanack of health*, published abroad last year*, I find this given as a common

“ fever, he died nine months after the accident with genuine
“ signs of consumption: It was natural to expect ulceration of the lungs, as spitting of blood had preceded; but
“ no such thing. The lungs were quite sound. But the
“ interior muscles of the spine were almost destroyed by
“ ulceration.” (*Baumes de la phthisie pulmonaire.*) This is a case that would probably have been cured by caustics and digitalis—and of course have passed for cured consumption.—And would it not have proved as much in favour of the treatment as if it had?

* Gesundheitsalmanack. 1801.

sort of dialogue between the physician and his consumptive patient :

Physician. Do you cough a great deal ?

Patient (*coughing*). Oh no—by no means.

Physician. Have you spit any blood ?

Patient. No.

Physician (*looking him hard in the face*). Have you really not ?

Patient. Yes, indeed ; a trifle—but it is some time since, and it did not come from the lungs.

Physician. Do you sweat in the night ?

Patient. Why, I do sweat ; but then it is because I lie under a heap of cloaths.

Physician. It is well if you have not something the matter with the chest ?

Patient. God forbid ! but it can be no such thing. My chest is sound (*striking it*). Observe, I feel nothing from that. But my stomach indeed may be relaxed. This plaguy wind——

It is commonly observed with some surprise, that persons affected with so unmerciful a malady as consumption, are insensible to their danger ; and not only so, but when it is confirmed, and their last hour approaches, they cherish the expectation of recovery, and amuse themselves with plans to be executed at some distant day. This is sometimes represented as if the disorder

itself generated the chearful feeling of hope. But any person, acquainted with the manner, in which our thoughts and sensations are formed into trains, would be able to perceive, from the history of its symptoms, that consumption must be a *flattering* complaint. No two things can be more different than the impression upon an impartial spectator from the multitude of deaths, exhibited by the bills of mortality, and that which is made upon the patient by the actual presence of the first symptoms of the complaint. There are several circumstances that render invalids blind to their danger during the early stage, and which indeed, except in very few instances*, preclude, even to the very close, any

* I have not met with above half a dozen instances, where consumptive patients had renounced all hope of escape, before the tragedy drew near its termination. In none of these did the steady prospect of dissolution produce the smallest lowness of spirits or self-bewailing. But this very serenity of mind rendered the cases more affecting. In one, a young lady of Norwich, aged 17, the flower and favourite of a numerous family, requested her friends to retire that she might have an opportunity to ask me how long it was probable she could survive. On hearing my answer, she very calmly regretted that her period of suffering was likely to be longer than she had hoped.

The late Lady John R—— told me with the utmost tranquillity that she knew herself to be in a confirmed consumption, and that she had no hope from medicine.

steady and unvarying sense of their danger. In the first place, the deviation from health is commonly gradual. Indeed in many cases there cannot be properly said to be a deviation from health. It is only a transition from a valetudinary state into a serious disease; whence the habits have been already moulded to suffering. The most healthy women know something of the feelings, accompanying indisposition. They therefore exhibit more patience under sickness than men. But phthisical women shall be for years in a state of probation for the scenes of wretchedness, brought on by this complaint. Hence it is less likely to give alarm, while forming.—The morbid process is seldom attended with acute pain; and sometimes no pain at all is felt in the chest, or none till towards the last. But what principally diverts attention from the growing evil is, that it cannot be seen or felt. Were pulmonary tubercles as much exposed to observation as schirrus of the breast, consumption would be nearly as much an object of apprehension to those who are falling into it, as cancer.—Then we must remember that something has

“Nor,” added she, “do I regret my fate, but for the
“sake of these”—pointing to her children.—Life does
not often present more moving scenes.

got abroad concerning the difficulty of discriminating pulmonary consumption, which is probably conceived to be greater and more frequent than it really proves. But almost every one will interpret the chance in his own favour; and even medical practitioners, influenced by some of these causes of deception, as by the multiplied and fruitless, and perhaps unimportant attempts to find a criterion for purulent matter, will shut their eyes to the fullest evidence, when it is presented in their own person.

It is a general opinion that, in this deplorable disease, ignorance is bliss, and that the knowledge of the real danger is more to be deprecated than any fluctuation of hope and undefined fear—for decay and suffering generally give birth to apprehensions, though the terrible idea of consumption should never arise. But whatever we may look upon as most desirable with regard to invalids, there can be no reason why those about them should be lulled into neglect by the same delusions. Let it not therefore by them be considered as any argument of security that young persons do not complain; that they can seemingly carry on their accustomed occupations as well or nearly as well as ever: or that the appetite has not fallen off. It is sometimes impossible to make it understood that those

may be in most imminent danger, who can go about and take food. The idea of serious illness one finds inseparably united in some minds, with those of entire helplessness and a sick bed. The condition of the lungs, however, is so far independent of that of the digestive organs, that there are instances where the consumptive are seen to eat to the day of their death as plentifully as in their best health. Nor is there any organ of the body but what may have its structure irreparably injured by a process, which for a long time shall give no alarm.

With a narrow chest, one of the most suspicious symptoms is habitual quickness of respiration, when this is ascertained not to depend on any female complaint. It is more suspicious still, if it increase with flushing and feverishness in the latter part of the day, and on every slight exertion. Yet this symptom will come and go for a number of times, before it is rendered permanent by extensive disorganization. Divers moral and physical causes will produce this variation. From what has been already said, it may be easily understood that it is not so much the existence of tubercles of moderate size, as their being in an increasing state, and irritating the contiguous substance of the lungs, that produces the distress of inci-

pient consumption. Respiration would go on without much inconvenience, if the tubercles, such as they generally are in the early stage, only precluded the entrance of a quantity of air, corresponding to their own bulk, into the lungs. How much difficulty of breathing depends on irritation, and how little on the mere bulk of an obstructing cause, is proved by appearances, that often enough occur to medical men. Hard substances for example of inconsiderable size have been drawn into the windpipe, and have occasioned an inflammation of the superior part of the lungs, so violent as to end in an abscess. From the effects of a small fragment of soft food, which has gone the wrong way, it may be conceived what agonies would follow so terrible an accident. The labour of the breast has in reality been such as to throw the whole frame into convulsions*.

* A maid-servant of W. Martin's, Esq. of Shadwell, attempting to speak hastily in the act of deglutition, drew some of the crusty part of a piece of bread and butter into the wind-pipe. In a few hours, she was deprived of her senses and of her speech, and lay in strong convulsions, fetching her breath very short, so that it was expected she would expire that night. After some time the violent cough left her, the extraneous body appearing to have made its way into one lobe of the lungs. "Notwithstanding the great agonies she was in while awake, the second

Yet when the strength has sunk under these furious agitations, and an interval of sleep has taken place, the function of respiration has been performed with as much tranquillity as in the most perfect health. It will therefore hardly appear surprizing that affections of the mind, changes of food, another complaint, a journey, and personal incidents of which no account can be taken, should procure a temporary respite. The same thing will happen from the same causes with regard to the feverishness, excited by tubercles in their progress towards suppuration. It will often subside and often return, before it is matured into that fatal and unrelenting hectic, which leaves the patient no single day or night unmolested.

We have seen that their inactivity produces greater frequency of disposition to consumption among females. From the greater uniformity of their life, they experience fewer escapes or accidental cures. For, considering the multiplicity of facts, by which the conclusion is supported, there can scarce be any doubt but the very causes, which suspend

night after the accident she fell asleep, while insensible, slept sound for several hours, and while in that state fetched her breath quite easy, as she did every night after, when asleep, with a serene pulse, but always awoke in exquisite pain and in great agitations." On the eleventh day an imposthume which had been formed broke, and a piece of crust about the size of a filberd was discharged. The account leaves the patient recovering, but weak, and with a hollow cough, "as if the lungs were impaired." It seems never to have been stated whether she fell into consumption or not.

consumption at the period of its first formation, will in some constitutions and under some circumstances, put an entire stop to it. If those incidents therefore, to which the male sex is more particularly exposed, are occasionally fatal by hurting the chest, they full as often perhaps counteract the constitutional or hereditary tendency to consumption.

Among the instances that favour this opinion, I reckon those, where it appears that disorganization of the lungs and even tubercles in a state, by no means quiescent, may subsist for a long series of years without occasioning death, though they do occasion death at last. Facts of this class teach two important lessons; the first, to lay hold of the opportunity, afforded by slow progress of tubercles, or its occasional suspension; the second, that we are by no means to conclude that calamity will never arrive, because it advances with a heavy pace.

By way of illustration, I select the following narrative in preference to a case from my own experience. It is given as a simple, unapplied occurrence, by an author of good credit, already quoted. “ A nobleman of
“ remarkably stout constitution, and choleric temperament, was unfortunate enough,
“ at the age of 19, to have a cannon ball
“ pass close by his chest. He instantly sunk
“ to the ground, and had a violent hæmorrhage from his lungs. He got speedy assistance, however, but from that time forwards, he had frequent and violent returns
“ of the hæmorrhage. He was troubled with
“ constant cough and purulent expectora-

“ tion. The febrile exacerbations were some-
“ times mild, sometimes more severe, and
“ the purulent matter discharged varied in
“ quantity. But the difficulty of breathing
“ was incessant. He moreover often com-
“ plained of distress on the right side beneath
“ the short ribs, and after eating, he had a
“ sense of oppression in the region of the
“ stomach. Nevertheless, except at the time
“ of fever he had a good appetite, and the
“ bowels were regular.

“ He made seven campaigns in the quality
“ of colonel, and consequently was subject
“ to violent exertion. Afterwards he per-
“ formed variety of journeys, being from
“ first to last of an active turn. From his
“ rank, he was under the necessity of fre-
“ quenting the tables of the great, where he
“ would make a good meal of substantial
“ food—always abiding firmly by the pur-
“ pose he had adopted immediately upon
“ the accident—never to touch wine or any
“ heating liquor. Happily for his family he
“ attained his 55th year.”—The author goes
on to relate, that not long before his death
he was injudiciously treated for a catarrhal
fever with Peruvian balsam and with the
bark, by which his hæmorrhage and short-
ness of breath were aggravated.

On opening the body, “ both lobes of the
“ lungs were found more than usually large.
“ They had the appearance of the liver, being
“ of a blue red colour. There were innu-
“ merable tubercles dispersed through their
“ substance, which tumours had suppurated,
“ and formed open abscesses even to the

“ very edges of the organ.”—The author then mentions that the liver was of most uncommon size, and concludes thus—“ an
“ example without example! to exist 35
“ years with lungs in such a state. I can
“ ascribe it to nothing but the wonderful
“ robustness of the constitution, and to abstinence
“ nence from all fermented liquors.” (*Marx ubi supra.*)—Should it be asked how we can be sure that the lungs had been in the same diseased condition for so long a time, it must be confessed that there can be no certainty of a point, not ascertainable by any of the senses. But the characteristic symptoms of tubercles existed from first to last. There was no change of symptoms but in degree, and the original injury and the hæmorrhages were likely to produce the very effects discovered after death.

Where consumption has not occurred in any preceding generation, it is natural that incredulity should be most obstinate. I do not know that I can do any thing more effectual towards banishing this incredulity, when it resists all probabilities united, than to transcribe a letter, which passed upon a real occasion. The occasion is certainly one of very common occurrence.—“ I al-
“ ways wish to give the friends of inva-
“ lids the fullest information in my power.
“ I shall therefore reply minutely to your
“ general letter of enquiry. I cannot pos-
“ sibly convey to you my opinion along
“ with the degree of conviction, attached
“ to it in my own mind, but it is not dif-
“ ficult to lay before you the principal
“ grounds on which that opinion rests.

“ I can easily perceive that in spite of the
“ ravages, made *for the first time* by con-
“ sumption in the family of one of your
“ nearest neighbours and most intimate
“ friends, you are more than half inclined
“ to think I over-rate your daughter’s
“ danger. This hardness of belief is com-
“ mon; and it is certainly a principal reason
“ why the annual deaths from consumption
“ in Great Britain amount nearly to the
“ sum they do. The exemption of your
“ family hitherto is likely to weigh with
“ you against a truth so unwelcome. In a
“ case where the appearances could be plau-
“ sibly referred to any other source, it would
“ weigh with every body. But the positive
“ assurance we have, that this is a most pre-
“ valent disease among delicate females, and
“ the high probability that some universal
“ influence increases its frequency, where
“ already known, and introduces it into new
“ houses, overbalances this consideration.

“ Then is it not evident, that Miss ——, by
“ the conformation of the chest, by her com-
“ plexion, by the colour of her eyes, the
“ enlargement of the pupil, and the general
“ feebleness of her habit belongs to a class,
“ marked by nature as consumptive? And if
“ we are to lay no stress on remoter points,
“ however important, what shall we say to
“ positive, recent symptoms? Have we not
“ the early indications of pulmonary tu-
“ bercles as clear as indications can exist in
“ a slow and deep-seated disorder?—Subse-
“ quent, as I am given to understand, to
“ an inflammation of the chest in spring, a

“ short cough came on, and it has continued
“ now for seven weeks. She has quick dart-
“ ing pains in various parts of the chest.
“ She has the sort of flying chills and heats
“ that often precede ulceration of the lungs.
“ Her breath is generally quick. She cannot
“ walk up a flight of stairs without rendering
“ it more so, and without increasing the
“ pulse to 120 or 150 strokes in a minute.
“ The bronchial membrane is relaxed. This
“ appears from the constant expectoration
“ of phlegm; and another weakness shews
“ that another membrane is in no better
“ state; not to speak of too much disorder
“ at *particular* times.

“ From all the accounts, too, she has fallen
“ away, and rather rapidly regained flesh
“ within these twelve months—a very com-
“ mon occurrence on the eve of consump-
“ tion, when people move about much from
“ place to place, and sometimes happening
“ from no assignable cause.

“ I really know no other complaint, to
“ which all these symptoms can be referred:
“ decided and constant as they are, will you
“ cherish the dangerous persuasion that they
“ belong to no denomination of disease, but
“ will vanish of themselves as they came?
“ In less advanced cases, I have no doubt
“ but journeys and accidents one cannot
“ specify, do sometimes procure a respite,
“ and even accomplish a permanent cure:—
“ an observation, which will give you to
“ understand in part, why boys are better
“ off in regard to consumption than girls.—
“ When this sort of spontaneous cure takes

“ place, people are deceived into the belief
“ that no just reason for alarm ever existed
“ in the individual case; and that there can
“ exist none in similar cases. You are well
“ acquainted with F. S——. That young man
“ was thought by more than one medical prac-
“ titioner to be on the brink of a decline.
“ His business led him at that crisis to un-
“ dertake a long voyage, and he has been
“ since continually in motion. So far he
“ has struggled on, though with difficulty.
“ But the girls had not the same good for-
“ tune. Yet the symptoms at first were just
“ the same in both; and the fate of one of
“ their parents was equally alarming for
“ both.

“ I doubt whether all this will be con-
“ vincing. However I give the opinion after
“ much observation of the complaint, and
“ much attention to the party, whose health
“ I consider as at hazard. To mistake real
“ warnings is not easily excusable in a phy-
“ sician. What I would next be cautious
“ to avoid is the raising of groundless ap-
“ prehensions. And next to being right in
“ my judgment, I should wish the friends
“ of my patients to think me so.” — — —

But when continued indisposition and ma-
nifest decay have produced a tardy convic-
tion, what is more common than the adop-
tion of frivolous or hurtful measures by the
managers of invalids? Of two opinions from
different medical practitioners, they will often
follow the more inefficient. They cannot
persuade themselves that what is so trifling
in shew, can be so formidable in reality.

“ Something however may be necessary to “ be done.” So juleps, emulsions, and saline draughts under the appellation of *gentle alteratives*, are poured down without mercy. The complaint holds on its course and terminates as it always does, when the most active remedies are put off beyond a certain season. Those however under whose sanction a life has been thus trifled away, force themselves to believe that every thing has been done of which circumstances admitted.

At other times the interposition of a gossip shall procure a trial for some decoction of figs and raisins, for some compound of sweet oil, acid and honey or sugar-candy, for some soup or jelly prepared of materials less palatable and not more nutritive than ordinary. In a catarrh, which would go off by itself after a certain period, such preparations may twenty times have appeared to the ignorant to effect a cure; and I grant they might really have been of transient use in lubricating the top of the throat, and easing a fit of coughing. But the idea of their having power to remove a cough, occasioned by beginning alteration in the substance of the lungs, can never be entertained for a moment, by any one who has an idea of the real condition of that organ. And this is a case in which a very small portion of anatomical information would be a safeguard against very gross and very fatal, but very common errors and impositions. To have considerably inspected a pair of lungs, beset with tubercles, and to have heard at the same time such an explanation as will place

the concomitant phænomena among a man's current ideas, may be the means of preserving the constitution of several children. And where there is a horror of preparations from the dead human body, we now see how easy it will be to obtain a full illustration of the nature of this exterminating disease from the bodies of brute animals.

At other times, entertaining just suspicions, but for want of accurate information, flattering themselves that the internal cause corresponds to the slightness of the external signs, parents shall take the cure of incipient consumption into their own hands. For this purpose, they will often convey their invalid to a watering-place, and set him upon a course of water-drinking on their own judgment. Not infrequently they repair to the sea-side, though there is no reason to suppose that station beneficial in any circumstance of pulmonary consumption; and some medical invalids have reported it injurious to themselves. It is well, if they do not venture upon the hazardous prescription of bathing in the open sea, or in cold fresh water.

That cold mediums may be applied with advantage in all the stages of consumption, the reader will easily collect from the observations on this subject in Essay fifth. But some discrimination is requisite to adjust the interest of the system with regard to heat and cold. And it is very seldom indeed that a physician, in possession of all our present stock of information, would venture to advise immersion in cold water. As a promiscuous measure, without regard to states and seasons,

it cannot be too strongly condemned. In an instant, cold bathing will accelerate the progress of tubercles—at least, it will aggravate every phthisical symptom—more than the other ordinary causes in weeks and months. Nay, I will venture to say, that it will fix the disease where fluctuating, recall it where departing, and ensure it, where uncertain. A person who has been often a witness to such occurrences, must despair of being able to find admonitory expressions sufficiently strong; while he, who has never witnessed such occurrences, will hardly conceive that applying water at the temperature of our springs to the skin, is very often as surely, though not so quickly, destructive as giving a draught of laurel-water would be. There are analogous cases, in which the effects of the same cause are more palpable. And by assisting the reader's conception, these analogies may induce him the more readily to believe that in particular states, one, two, or three plunges in the cold bath are capable of disorganizing any of the viscera in the chest. Thus the late Dr. R. Pulteney of Blandford, whose authority is a guarantee quite sufficient for such a fact, relates of T. C. that he was ricketty in his infancy, and very weakly for several years after; that in the winter of 1759 he had pleuritic symptoms; that a rheumatic fever the next summer left him afflicted with chronic rheumatism; and that he was advised to go into the cold bath. “He did so: but upon coming out again, “felt such an increased load, fainting, and “anxiety about the præcordia, that he thought

“ he should hardly have recovered the shock
“ it gave him. Nevertheless he ventured in
“ again a day or two after, but experienced
“ the former symptoms in an aggravated
“ degree, and from this time dated the dis-
“ order which terminated his life!” A pal-
pitation of the heart, to which he had been
before subject, increased greatly; he became
weaker, breathed short on the least exertion;
sometimes could not sleep above an hour or
two in the night; commonly awaked with a
sense of suffocation, and at the end of a year
and a half was actually suffocated by a dis-
charge of blood from his lungs. The heart
was found of an enormous size; of a very
pale colour; loose and flaccid in its texture,
and with the sides very thin.—The great in-
crease of this man’s disorder on using the
cold bath only twice, does not indeed prove
any thing with regard to the consumptive.
It only demonstrates the formidable power
of the agent in a constitution nearly allied
to the phthisical, and where some mischief
pre-existed in the chest.

In the life of J. H. Beattie by his father,
the well known author of the *Minstrel*, we
have strong indications of the tendency of
cold mediums, incautiously applied, to occa-
sion or accelerate the destruction of the lungs.
Indeed the preceding opinions concerning
the *JUVANTIA* and *LÆDENTIA*—the things
that help and those that hurt, are singularly
corroborated by the whole narrative. The
coincidence must give the greater satisfac-
tion as the narrative was not drawn up for
any medical purpose, and as the opinions, in
another form, were given to the public first.

Young BEATTIE, we are told, was born with “a very delicate constitution.” His head-aches persecuted him so that he was unable to make the proficiency he desired in drawing. About the precarious age of 15, as it would seem,* “he laboured for several “ weeks in endeavouring to learn to swim - - “ but it appeared at last, *that the chillness of “ the sea-water did him more harm than good.*”

The compositions and projects he left behind, shew him to have read and meditated with dreadful assiduity. At 20, he was able to deliver lectures, as professor of moral philosophy. Shortly before, he was advised to “apply to music as an innocent and useful “ recreation after the fatigue of study!” He not only learned to perform with good expression both on the organ and the violin, but went deep into the theory of the art! He occupied himself with incessant diligence in literary accomplishments. He wrote English and Latin verse, and did not altogether neglect composition in Greek. No wonder that, in a feeble habit, and with such intemperance of application, he should be subject to occasional indispositions. Change of air and scene, however, deluded him from time to time with apparent recoveries. “The air “ of Peterhead several times restored his “ health, when it was declining in a manner “ similar” to that, which preceded his last illness—

About a year before his death, he was such-

* Minstrel and other Tracts, by Dr. Beattie, and by J. H. Beattie. Dilly—1799.

denly seized with a violent fever fit. Ever afterwards he was molested by night-sweats, and sensibly fell off. For a time he laboured under that obscure kind of indisposition, which, in the puny and narrow chested, I have marked as peculiarly suspicious. Here, the whole tenour of the narrative shews that it arose from tubercles in an active state. In spite, however, of that tenderness of form, which the portrait exhibits, and in spite of the consideration that at such an age, and in such subjects, consumption is the reigning malady, the case was not considered as consumptive. It was called a *nervous atrophy*. But a cough at last made its appearance, and in a few months he died at the age of 22.

Rowing, fishing, shooting, and even archery are numbered among his active pursuits. These are however of such a nature, and his passive pursuits were so various, that he was not likely to recur to them but by fits, and then he would probably be tempted to over-exertion. It is remarkable that once, when his health was impaired, he fell upon a continued and gentle exercise. From the effect we may, in some measure, judge of the advantage of such occupations, when they are begun early enough, and fill up a sufficient portion of life. Building an organ for himself “occupied him for five months, and the “amusement he derived from the work, and “the musick with which it afterwards supplied him, had the happiest effect on his “constitution.”

The friends of this remarkable young man will not read the foregoing analysis unmoved,

should it ever fall into their hands. It may, perhaps, excite an emotion of ill-will towards the author, as if he had disturbed the ashes of the dead, or sported with the feelings of the living. But the impartial will, I hope, consider it as more than a right to use the information, that is laid before the public, for the public benefit. To mark the rocks on which former adventurers have struck, though it recal past calamities, can hardly be a cruel office, even if we did not perceive the numbers to increase that ply in the same fatal track.

MAXIMS, *to be hung up in the heart of every father of a family.*

1. If either side have been consumptive, use the earliest precautions, and do not relax, under peril of attending your daughter in her shroud, instead of her wedding garments.

2. Should she escape, see if she owe not her preservation to some other standing disorder.

3. Your son's chance will be better, by how much he is more robust, and the less he is exposed to hardships without the most gradual seasoning.

4. Though consumption have not been on either side, the chance, without an anti-phthisical regimen, is still bad. Two or three colds upon colds in winter, or a cutting blaff in spring will do the business; and in the mean time, there shall be wretched health almost to a certainty.

5. Set not your heart upon accomplishments, elegant or literary. Book-learning should be the least concern of the delicately constituted. Living instruction turns out its pupils not only stouter but abler.

6. When a son or daughter droops between 14 and 34; suspect that a secret enemy is sapping the lungs.

7. When those, who *must* be ignorant of the essential difference between a common cold and consumption, boast of their cures, hear but heed them not. Ask this question of your common sense—*what experience can instruct such pretenders?*

8. A little cough may be the sign of a great disease. Beware then how you play the doctor's part. Would you consent to be turned blindfold into an apothecary's shop, and give your child the first drug you may lay your hands on?

9. It is wise to check a bad cold the first week; but much wiser the first four and twenty hours.

9. After the small-pox, hooping-cough, scarlet-fever, and measles, watch your young convalescent close. If he bark but once, fear lest there be a murderer within.

10. Though dislodged, expect him again; he now knows the way.

11. You think perhaps a single course of medicine *ought* to be effectual, and that once cured is cured for good. But nature, be assured, will not be regulated by your fantasies; you have probably been acting in defiance of her for years, and then you may think yourself happy to compound with her on her own terms.

12. The less consumptive any one is rendered in the rearing, the greater chance of recovery, if he becomes so.

13. When consumption is hanging about a girl, the distance between the marriage-bed and the grave is usually short with her. The husband, if he do not become a widower soon after the birth of the first child, may reckon upon a perpetual ailing wife.

IS CONSUMPTION CATCHING?

YES, answer the writers of the South with great consent, though not unanimously. The writers of the North say, NO. To our comfort, the former are either dupes to the phantoms of their own imagination, or their facts do not apply to us. We are certain that furniture and apparel, more bulky than bolt-ropes and gloves,* and certainly not less

* I have heard Dr. Luzuriaga, in whose veracity I have entire confidence, relate the following fact. He has since published it, and it has been quoted as one of those most strongly in point. A Nun died at Bilboa of consumption. The furniture was burned; the walls, ceiling, and door washed, the floor taken up and sand laid in its place. The cell was then tenanted by another nun in perfect health and of an excellent constitution. In two months, she began to decline; her flesh wasted, the chest was attacked, the cough became worse and worse—in short she died consump-

likely to foster the matter of phthisical contagion, has no such effect with us. In any country is not accidental succession more probable?

What alone gives a colour to the idea here, is that a husband or a wife, no way predisposed, shall sometimes speedily follow the fate of the partner for life. But an experienced physician shall not see the fact above thrice in his life. Other probable causes, too, sometimes occur. And as there is no absolute exemption, must not such coincidences sometimes happen from the very frequency of the disorder?

An especial reason may be assigned in the case of married people.—The physician is doomed to witness the most humiliating scenes in this tragi-comedy of life. But he is in return the privileged spectator of the most ennobling—where the fortitude of those who suffer generously contends with the devotion of those who soothe. But what may most console us for the base and selfish alloy

tive in eight months after taking possession of the cell. General purification as before. It was supposed that the disease was hereditary in the last case. A third healthy nun succeeded and died in the course of the year. New examinations took place, and it appeared that the cord near the bed, attached to the dropping bolt of the door, had not been removed. This, it is said, was impregnated with the sweat of the patients, and with other noxious exhalations. It was removed; new furniture introduced, and a fourth has lived in the same cell for five years.—In Italy there is the story of a beautiful pair of gloves worn by a first wife, and alone of all her appurtenances not destroyed upon her dying consumptive. Long after, a second wife spies the gloves, wears them, and perishes like their former owner.

in our nature is the affection we find subsisting between persons that have been long united. Where neither dislike nor indifference has followed intimacy, this sentiment, which in ordinary situations retires from view, bursts forth, in the hour of danger, strong and undisguised, as it shewed itself in ages, when the sincere expression of the feelings stood in the place of that circumspect and disciplined demeanour, which looks round among the by-standers, before it dares listen to the voice within.

Every one sees how much self-neglect is attached to affection of this degree. The consequences of self-neglect can as readily be conceived. What more in order than the strongest constitution should be enfeebled by the impression of cold, received under the most unfavourable circumstances, and which must be intense indeed, before it can be sensible to an occupied mind. What more likely than that the firmest chest should be shattered by the incessant aggravation of catarrh? Sorrow willingly joins exposure and fatigue. So that, without contagion, these allies will find no more difficulty in their operations, than associated armies before an otherwise impregnable fortress, when its walls have been rent by an earthquake to their foundation.

The succession of the disease, in persons not predisposed, is too rare to admit of the supposition of contagion. In the general hospital of Vienna, Dr. SCHMIDT, one of the physicians, tells us that there died in three

years, from 1797 to 1799 inclusive, 2,735 patients of consumption, without the physicians or nurses being ever infected.

PROSPECT.

Who shall undertake to tell the fortune of the coming generations? and satisfy us whether we are still to hear of the domestic horrors of consumption being repeated, among us, eighty or a hundred thousand times every year? A lot of young men and maidens from the first families in Athens were annually sent to glut the monster of the Cretan labyrinth. But the sentiments of the people rose against the horrid tribute, though it consisted but of seven of a sex, and it ceased.

Without being a Theseus, one might engage at once to reduce the tribute of lives we render to consumption. It must first, however, be generally believed with SYDENHAM, that our *chronic maladies are of our own creating*. An universal interest too must be taken in the condition of those about us, not less lively than the desire we see so prevalent of dazzling strangers by the splendour of an equipage, or by the lights of the understanding. Our taste must be corrected. We must all learn not to bear to have every thing about us—cloaths, tables, chairs, pictures, statues—all exquisite in their kind—except our progeny. We must be shocked at seeing, under the same roof, perfect representations of the human figure in contrast with the most wretched

realities. This we must feel to be, as it actually is, in a more barbarous style than the Prince of Palagonia's groupes of marble monsters. Parents, in short, must find and seek honour in the healthiness of their children.

I suppose this time will come, because I think myself able to point out its most certain sign.—Wise and worthy men have fixed upon the state of intercourse between the sexes, as the surest criterion of the happiness and virtue of a community.* In spite of the celebrated forgeries of Macpherson, we must indeed still regard the importance of women as a proof of civilization. But it is more useful to hold the principle in view than to rest upon an example, the happy choice of which is extremely questionable.

The principle of civilization is no other than the spirit of equity. It is the abolition of the *jus fortioris*; the resignation of those advantages which the stronger owes merely to his strength.—Readiness to make a present sacrifice for a distant good is but the same principle in another form. It is merely the spirit of equity, which always first emanates abroad, reflected.

We may, then, set down justice to the weaker

* “ In appreciating the happiness and virtue of a community, there is perhaps no single criterion, on which so much dependance may be placed as the state of intercourse between the sexes. Where this displays ardour of attachment, the character and the influence of women rise in society; our imperfect nature mounts on the scale of moral excellence, &c.”—*Life of Burns, preface p. 18.*

sex as a happy commencement, but by no means as the completion of civilization. It is only the first infringement of the authority of brute violence.—Where the greatest physical and moral means of enforcing claims exist, there will the claims be first admitted. In their intelligence, stature, tenderness, services and confidential intercourse, women find these greatest means. A community therefore may be much civilized in regard to women, while it remains barbarous with regard to two other classes of human beings. In declining Rome, women were of importance, and could torture the poor slaves for their amusement, while the condition of children, except by courtesy, was little inferior to that of slaves. The history of modern cultivated states shews the abolition of vassalage and slavery at home, while the ancient sternness towards children continued in doctrine, and was often exhibited in practice. There is a sculpture, from which it has been collected that Sully's children stood while he dined, and I have been well informed that a British nobleman, not long since deceased, never allowed his sons or daughters to sit down in his presence unbidden. How remarkable that about the same period of the last century, the cause of colonial slaves and of children should have been pleaded with all the fire of eloquence and force of truth!

The scheme to which these ideas belong, is easily completed. Pleas in behalf of weakness must be nearly alike. To admit

one is a step towards admitting all. It is the honourable distinction and most striking character of the present age, that sentiments of perfect equity are extending themselves to the most helpless class. We every where meet with parents renouncing all capricious exertion of authority, and careful to weigh their children's welfare in the scales of justice against their own inclinations. By this truest criterion, we may safely decide that civilization has advanced. And our contemporaries must obtain as individuals that applause, which will less readily be granted them in their collective capacity.

It follows that consumption will not be suffered to continue its present ravages. For nothing further is required to stop them, than to carry the disposition, already formed in favour of young people, fully into act. It is manifestly a disposition that cannot remain at rest, while its objects are so cruelly suffering. Nor will it be content with doing for them what is *good*, but must go on, by its own progressive spirit, to what is *best*. And what is this but the removal of such causes of unhappiness as are inherent and personal, not transient and depending on the pressure of external circumstances? Some few families I know, where the most determined steps have been taken, from the very cradle, to resist the "GIANT-MALADY" of our island. There the human plantation flourishes like scions, removed from shade and rubble to a rich and sunny soil. I look upon it that such

families have nearly as much the advance upon many respectable authors on education, as these authors themselves have upon the monkish institutors of our school-discipline. As soon as such examples shall become a little more common, it will appear manifest that the devastations of consumption proceed from domestic mismanagement, and not from the inalterable dispositions of nature.

END OF ESSAY VII.

ESSAYS

ON

THE MEANS

OF

AVOIDING

HABITUAL SICKLINESS,

AND

PREMATURE MORTALITY.

ESSAY EIGHTH.

Vol. II.

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Quanta morborum hinc cohors, si vires digerentes non bene se habeant? - - - PRIMÆ VIÆ magis quam aliæ machinæ nostræ partes morbificarum causarum influxui exposita sunt: nec non ob organorum, ex quibus constant actionumque particularium ab iis perficiendarum varietatem innumeris obnoxiae sunt a sanitate deflexionibus. Quis, rogo, plus morbis obnoxius est? au pauper agricola qui æëris vicissitudinibus absque ulla fere cautione corpus exponit, quique quod ad cæteras res sic dictas *non naturales*, imo naturales, attinet, multo incautius vivit quam dives civis? An verò hic, qui licet multo solertius evitet noxium plurimarum causarum occasionalium influxum; tamen multo frequentius morbis laborat, cum in uno tantum peccet, quod scilicet vitæ suæ genere primarum viarum actionem debilitet?

What a host of complaints, if the digestive faculties are out of order? - - - The PRIMÆ VIÆ are more exposed to morbid influences than other parts. On account of the variety of organs, and of the offices to be performed, they are liable to numberless deflexions from health. Which, I pray, is most liable to disease --- the peasant exposed, without precaution, to the vicissitudes of the air, and inattentive to the *non naturals* as they are called and to the *naturals* also, or the rich citizen? Does not the latter much more frequently suffer from indisposition, because by his mode of living he debilitates the action of the *primæ viæ*?

WEDERKIND.

ESSAY
ON
THE PRESERVATION
OF
THE PHYSICAL POWER
OF
ENJOYMENT;
WITH REMARKS ON
FOOD AND DIGESTION.

THE SUBJECT STATED.

HITHERTO I have been principally occupied in considering the first stages of life. By resolute adherence to the simple practices inculcated in the foregoing series of Essays, we shall no longer see those members of society, who seem to have the fairest title to a happy and protracted existence, mowed down by whole ranks every year. The agents which slowly and silently loosen the ties, and open the seams, of the constitution,

leaving it a wreck to the mercy of the elements, will be counteracted in their operation. A few scattered individuals here and there may perish from inevitable accidents. But the bulk of our youth will be snatched from that fate, which at present they so frequently experience. I proceed, in the next place, to consider how they may be delivered into their own keeping with *the faculty of pleasurable sensation* unimpaired. Nor is this the affair only of youth. For in the progress of existence, what shall we look upon as the first concern of all, but more particularly of those privileged classes, who, by favour of Fortune, find perpetual admission to the feast of Nature?—It is surely to know how they may maintain this faculty in its most perfect state of freshness and vigour.

To beings, endowed with feeling, it is essential to strive to draw all possible gratification from the things, by which they are surrounded. The attempt to keep this propensity under forced restraint has always proved as abortive as it is unjust and injudicious. In the great majority it will not fail to break out occasionally with blind and destructive fury, or wear out mind and body, already enfeebled from continual privation,

by the efforts which will be necessary to resist perpetual solicitation. In the state of moral improvement, however, to which this country has advanced, mortification is rarely assumed or imposed as a duty. Our danger arises from untutored appetite. To indulge in such a way, that desire may constantly spring up anew to administer the occasion of fresh indulgence, constitutes the *virtue of temperance*, which, according to my apprehension, can be no otherwise considered than as synonymous with the *art of enjoyment*. In endeavouring to illustrate such of the fundamental principles of this art, as are entirely of medical resort, I should be happy if I were able to assume a tone the very reverse of that which we sometimes hear from our moral and medical advisers. For in addressing individuals, full of relish, hope and animation, and who have the world at their feet, they either require of them to renounce their advantages; or in pointing out to them how they may avail themselves to the utmost of these advantages, they speak as if they were imposing the most rigorous penances. What success must attend the proposers of self-denying measures, when they have no authority to enforce them, and when they do not thoroughly explain the

grounds on which they are adviseable, cannot be difficult to conceive.

Of the ORGANS that contribute in the first instance, to OUR NOURISHMENT.

The gratification most universally coveted, most frequently returning, and that qualifies us best for the enjoyment of the most refined pleasures and for the performance of the most important duties, is connected with these organs. “For physic, metaphysic,” as a lady wrote to her sick son, “all depend upon the inspiration of roast beef. If you would do well, you must eat and digest like a ploughman; nay, if you would walk well, think well, write well, &c.” The exterior of the human body is frequently contemplated with the highest delight: and but seldom, in its healthy state, with disgust. Familiarity with the internal parts, the exercise of the arts that disclose their structure and the study of their uses soon occasion them also to be viewed with deep interest, though as mens’ minds are usually disposed by our customs, it requires an exertion to overcome the repugnance, which arises on observing them attentively for the first time.

The stomach in man and in animals resembling man, is far from recommending itself by any elegance of appearance. It will, on the contrary generally be reputed an unsightly, membranous pouch. But the delicacy of its texture, and the consideration of its extraordinary powers, though it be, at first sight, so unpromising, may create a salutary reluctance to hazard any practice, by which it may be injured ; even though the integrity of the whole machine did not depend upon the sound state of this organ.

MECHANICAL FUNCTIONS of the STOMACH.

I call the functions, of which I am going to say a few words, *mechanical*, merely because they affect the whole bulk of the stomach. I shall not digress into the consideration of the almost incredible, but perfectly authenticated strength of the gizzard, by which animals possessing this very powerful machine, grind down globules of glass and sharp steel instruments, without receiving any hurt themselves. It would be beside my purpose to speak of any thing but the contractility of the thin and flexible human stomach, by means of which it constantly adapts itself

with accuracy to its contents. The stomach is never flaccid; its sides do not, at any time, fall flat upon each other, as those of a bag of no greater thickness, would instantly do, after the contents were discharged. If distended only to half its capacity, the inner surface is closely applied to the materials which it encloses. Nay, when quite empty, it purses itself up so completely as to leave no vacuity within. The difference in its dimensions will be easily imagined, when it is known that various physiological authors have estimated the quantity, which this viscus is able to hold at once, at upwards of ten pints. It is sufficient however if we suppose that it may sometimes receive two quarts, and sometimes be filled by less than an ounce, and if we remember that its sides, when separated by the introduction of aliment, approach again more or less closely by virtue of their inherent contractile power several times each day through the years of a long life.

Its living energy, when considered as a whole, is most apparent in its tendency to contract readily upon the remainder of the food, as part passes into the intestines, till nothing is left but that small quantity of

fluid, which issues perpetually, in greater or smaller quantity, from its own sides.

The disagreeable sensation we experience, when we say that *something lies heavy on the stomach*, may, in some cases, (as where it follows the use of certain liquids,) depend on the diminished contractility of its muscular fibres, though it oftener depends as much on another kind of weakness, which will be considered below. But the internal sinking, so often the subject of bitter complaint among the feeble, if they remain without food but a few minutes too long, depends perhaps altogether upon this diminution of contractility. The more vigorous the fibre, the more easily does it reduce itself to the dimensions prescribed by the healthy state of the organization. The more frequently also will it repeat this motion without exhaustion, and the longer continue the effort of contraction. But the enfeebled organ experiences greater and greater difficulty, as it retires into a smaller compass; and the utmost degree of retraction is accompanied by a most distressing effort, which distension from the introduction of a little food, immediately relieves. The sensation, though it cannot be characterised by words, is perfectly distinguishable by those who have

felt them all, from hunger, heartburn, or cramp. It infests the enervated and the indolent. The muscles that move the limbs appear to be at the same time in the same powerless state. For you will find them flabby, if you grasp them with your hand. And when the stomach is relieved by eating, a weary aching sense shall be felt in the extensive muscles of the legs and thighs.

In these circumstances the mischief is seldom long before it spreads from the centre to the circumference. But even when it confines itself to the original spot, a comfortable moment is scarce known the whole day ; and the night passes in watchfulness, disturbed dreams, or wearying sleep. This misery may arise from various causes. Ill-contrived cloathing and a sedentary life are conspicuous among the number. Animals at large seem to enjoy great exemption from stomach complaints, which in human life produce a much greater share of distress, than in proportion to the space they occupy in the nosology. Wild animals in quest of food, and domestic animals in that spirit of wantonness, with which they are filled by the wholesome delicacies of a rich pasture, each exert themselves sufficiently to preserve the moving and digestive organs in good plight. Those that

are fed within doors are frequently worked in proportion. It would appear that they hold the privilege of a light and easy stomach upon this condition. For that pampered parlour-boarder, the lap-dog, is hardly less subject to queasiness, inappetence and vapours, than his mistress. He has indeed one security more than she has. Fashion never offers violence to his chief digestive organ. It is never cased and corded down to its smallest dimensions; but after a repast is at liberty to rise from its resting place upon the interior of the vertebræ, and to take that free swell, without which the process of nutrition cannot be properly begun.

CHEMICAL FUNCTIONS of the STOMACH.

The proper digestive power may be called chemical, inasmuch as it seems to depend on the admixture of fluids, furnished by the stomach, with the aliment, and on the entire alteration they produce in the interior constitution of the received aliment. The chemical and mechanical powers appear to go hand in hand. The more vigorously the walls of the stomach apply themselves to its contents, the more speedily and perfectly are

the other operations carried on. The sense of heaviness above mentioned most frequently seems to arise from the fatigue of the muscular fibres, vainly exerting themselves against materials, not prepared for being propelled through the lower of the two orifices of the stomach into the duodenum, or that bowel, which immediately follows in the alimentary tract.—What this preparation is, has been in a tolerably satisfactory manner ascertained.

In the ordinary process, whatever has been received among the varieties of proper digestible food is found reduced in a certain time to a pultaceous mass, and passing into the duodenum. This time we have reason to believe in health seldom less than three, and seldom more than six hours. For different experimenters, in consequence of taking a vomit about so long after eating, have found the contents of the stomach of a fluid creamy consistence, though in part previously solid; and in other animals, supported by mixed food, the same appearance has occurred upon opening the stomach after the same space of time. However this calculation is subject to the greatest uncertainty; the stomach having been found empty in two hours after

feeding,* and ordinary articles of food having remained undigested for days and even weeks. Besides, there is a great difference, depending on the difference of substances.

Among the chemical properties of the stomach, that of consolidating certain liquids is one of the most remarkable, and one of the most anciently known from the effect of animal rennet on milk. The human stomach possesses this property in a very eminent degree. Half a dozen grains of the human stomach, steeped in water, afford an infusion, which will make an hundred ounces of milk *come* into curd, as the people of the dairy express it. The change into curd of a particular part of the milk is instantaneous, supposing there be already a provision of that particular liquid, which, in health, is always thrown out by secreting vessels, and after

* Marshall BIRON, who used to eat with an excessively keen appetite, was killed by a ball an hour after dinner. The surgeons on opening the body found not the least trace of food in the stomach. This however is no demonstrative proof of rapidity of digestion. For the gastric liquor continues its solvent action as well after death as out of the body. The dead stomach is dissolved by what it has itself secreted. Earth-worms will live in gastric liquor at the temperature of 60°. At 80° they die, and are dissolved. The heat kills them first. Young rattle-snakes are found alive in the stomach of the old ones. It is here they take refuge.

death may be extracted by maceration. But if there be not a provision of this liquid, or if it be not of a proper quality, coagulation will not instantly take place, as will be rendered more than probable by some facts to be related by and bye. So that the mere membrane has not the power of producing curd.

This species of coagulation is believed to extend also to solids; that is to say, the solid is rendered of a firmer texture by the application of the coagulating juice; nor is there any difference between the operation on solids and fluids; it being in both cases, according to the late accurate Dr. Fordyce, the abstraction of water from a material, which, when acted upon by the stomachic liquid, or by any other coagulating power, is exactly the same, whether it come from the pure serum of the blood, the pure coagulable lymph, the white of an egg, the mucus, the skin, a tendon, a cartilage, a membrane or a muscle. Later chemists have indeed found that these substances differ more than in the proportion of water they contain. Three distinguishable principles *gelatin*, *albumin*, and *fibrin* having been found in some of them; and others consisting solely of one of these principles. But we may

assume on the authority of Dr. FORDYCE that they are similarly affected by the liquid thrown out by the stomach. Though I know not if this has been ascertained of gelatin.

Much uneasy feeling, if nothing worse, arises, when the work of consolidation goes on improperly; as it is so apt to do in the weak stomach of infants and in the depraved stomach of those adults, who have dealt unmercifully with this powerful, but tender organ.

In infants, and occasionally in others, the coagulating power would appear sometimes excessive, as we may judge from the strongly curdled milk, which is sometimes rejected. Whether this depends upon the conjoined effect of an acid and of the fluid gastric rennet, or upon some fault in the secretion of the latter is not certain. In either case, the addition of an alkaline substance, as of lime-water, will, I believe, prove an adequate corrective. Or if there be any scruple against the use of lime-water, alkali saturated with carbonic acid, which is now commonly sold under the title of *super-carbonated kali*, and is a perfectly bland neutral compound, may be used with the utmost safety. From one to two drachms in a pint of milk can produce no constitutional bad effect, but will prevent this and other species of indigestion, incident

to infants. The same admixture will tend to obviate the bad effects of water-gruel, arrow-root, and biscuit or bread diffused in water, which substances it is, I understand, now fashionable to use as the food of early life, though their use be contrary to every chemical and physiological principle. For these vegetable preparations are not more nearly allied than animal substances are to milk, the natural sustenance at this period, and they undergo prejudicial changes where the digestive organs are weak. Dr. CAMPER constantly gave his children biscuit pap with an addition of Venice soap. Soap does not appear the most eligible alkaline substance, but was fixed upon in deference to BOERHAAVE, who ascribes to it extraordinary virtues. We have it on the father's authority that they all grew up stout, and seldom were troubled with sourness.—As to adults, when they have injured the stomach by receiving into it matters of a pernicious quality, they will find no permanent comfort but in a change of diet. The subsequent considerations will explain what this change ought to be.

In the digestive process, the next step to coagulation is solution. Whether the same liquid perform both offices is uncertain, because it has been impracticable to obtain sepa-

rately the fluids, poured into the cavity of the stomach by its rich and varied apparatus for secretion. It appears unquestionable that the aliment, though first rendered solid, afterwards undergoes a solution as perfect as that of sugar in water. For hollow perforated silver globes, filled with flesh and other articles used in diet, have been recovered empty in a short time; which could have happened no otherwise than by the solvent effect of a liquid, that had found its way through the perforations, and acted upon the contents of the globes. And if farther proof were wanting, it has been obtained by procuring the gastric liquor from the stomach, and applying it to the same substances at the temperature of the body, by which treatment they have been observed to undergo perfect solution.

The idea of placing a window in the breast, through which the thoughts might be manifest, has been sometimes started. Disease has really afforded opportunity of directly ascertaining in a great degree what passes with regard to food in the interior of the stomach. In the old medical observers we find accounts of persons, living with a preternatural perforation in this organ; but

little credit was, I believe, attached to the reports, and no information drawn from the accident. However, two persons, within these few years, have exhibited themselves in two of the capital cities of Europe, with holes or wounds through the skin and coats of the stomach, by which that viscus could be filled from without or emptied at pleasure. Nor did the opening seem to impair the power of digestion or the general health. One was at Dublin. This man had received a wound penetrating into his stomach. The wound left a permanent opening about the third of an inch in diameter, which the patient kept plugged up. He lived to the age of 65, that is, twenty seven years after receiving the wound. He was excessively intemperate, and having suffered much hardship, died in the house of industry at Dublin of a gradual decline. He had been received into the Dublin charity at a former period in good health, but his sudden departure prevented any observations on his digestive process. All that was collected from him was: “that
“on removing the plug after taking milk,
“part of it, quite pure, escaped through the
“opening, and when his stomach was empty
“of food, a whitish sweet-tasted fluid adhered
“to the plug on its being withdrawn. He

“never felt pain in the opening nor inconvenience from any particular food.” The other patient with a perforated stomach was received into the general hospital at Vienna in 1798, and after a vain attempt to close the opening, examined by many of the medical faculty there, and presented to the students of medicine at the public lectures. Dr. HELM relates the following among other observations. When any particular things, as sour crout, gave the person (who was a female, and if not very lately dead, is still living) uneasiness, she had recourse to an expedient, which many a glutton might envy her, and which consisted in taking the oppressive food with her finger out at the wound. She then washed out the viscus with water, and this always relieved her, and revived her appetite.—Milk instantaneously curdled, except when the patient had carefully swilled out her stomach with water. In this case, says Dr. HELM, the coagulation did not take place, till after some time, for want of gastric liquor; as I incline to suppose.” But I could always, he adds, expedite this phænomenon by irritating the inner surface of the stomach with my finger. Asses’ milk coagulated with most difficulty, requiring several minutes on occasions, when cow’s milk curdled on the spot.

Among the different articles of diet, flesh-meat was constantly digested with most ease and expedition. Eggs and cheese—it is not said what kind of cheese—were very quickly digested. Vegetables in general were much longer in undergoing this process. But potatoes, cucumbers! and carrots soonest passed into the intestines.

But coagulation and solution are by no means the whole of digestion. A great deal more preparation is necessary to provide for repairing the waste of the body. The succession of steps may be compared to a very complicated manufactory, where the material, before it can attain the necessary perfection, passes through the hands of a multitude of artisans, each of whom, in his department, must do justice to the fabric; or else the whole labour will be as good as lost. What happens further to the solution in the gastric liquor is very obscurely known. It is undoubtedly propelled through the lower orifice of the stomach into the intestines in proportion as the solution is completed. In the first intestine, the bile and the pancreatic juice and the liquids, secreted by the intestine, are gradually mixed with it. But the effect of this mixture no one has ascertained. The addition of the bile is not necessary to

the main purpose of digestion. For the formation of chyle (or of that fluid which replaces the blood, as it is consumed in feeding the various solid parts of the body) would appear clearly independant of the bile; since the access of the bile having been artificially prevented, chyle was nevertheless found in its proper receptacles. The same thing has been ascertained with regard to the pancreatic juice, which, in ordinary circumstances, flows into the duodenum to be mixed with the substances that have undergone solution in the stomach, the full discovery of which step by SPALLANZANI, is by far the most considerable, hitherto made on the subject of digestion.

The only way we have of attaining any thing like a satisfactory notion concerning what happens to the alimentary mass, after it has been dissolved, is to consider the nature of animal and vegetable substances. These substances appear to be in general distinguished from inorganic bodies by their susceptibility of change. Their elements may be considered as united in a manner peculiarly loose, and as ready, on the smallest provocation, to start into new combinations. An apple or a piece of flesh placed in a temperature, too low to have any ascertainable

effect on a pebble shall be altered in its taste, consistence and whole constitution. Some of the elements, after undergoing new combinations, shall be given out in the form of air; some in a liquid state; and the remainder shall be unlike any thing the body contained at first. The alterations shall be different in a temperature some degrees below the ordinary temperature of the atmosphere from those which take place some degrees below it, or in a degree of cold sufficient to freeze the juices. In short, there will be a sensible variation of product, correspondent to variations of circumstances, apparently very trivial. Organised bodies, the matter of aliment, have a very complicated as well as a very changeable composition. Hence they yield great variety of products. Held in solution in the gastric juice—having other juices of various quality gradually added to them from the interior surfaces of the intestines—acted upon by the heat of the body—and perhaps influenced by the living membranes in some unknown way, remotely analogous to the effect of the metals in the galvanic pile, their disunited floating particles assume an arrangement, which art has not yet acquired the power to imitate, and form chyle;—a milky matter, consisting, when it

is taken out of the vessels, of a fluid, which coagulates spontaneously, of another fluid coagulable by heat, and of white globules, that give the whole its whiteness and opacity:

The principal means by which DIGESTION is impaired, and the DIGESTIVE ORGANS injured.

All the materials therefore which are capable of serving for food must have one common property. Each must contain the principles of chyle. Though it may be more easy to bring some into the state, in which their elements will coalesce into that particular species of fluid.—Hence we learn the task imposed upon the stomach and its appendages. By them it is necessary that the agents, on which the several steps in the transmutation of food into chyle depend, should be supplied from day to day in sufficient quantity, and possess the requisite qualities. Otherwise the whole system will languish for want of a renovation of that part of its substance which is continually wasted, and the region of the stomach will be the seat of a perpetual succession of nameless, harrassing sensations, rendering existence cheerless, and afterwards by means of certain associations,

as we shall presently see, becoming scarcely supportable.

If the chyle be the fountain of the blood, the blood is the fountain of the juices, instrumental in the preparation of the chyle. The blood must not only furnish to the secretory organs the elements of these juices, but it must circulate through them with a certain degree of vigour. No fact belonging to animal nature is proved by a greater number of examples than both the permanent and occasional connection between exertions attended by a vigorous circulation of the blood, and a keen appetite with a correspondent digestion. Not only do those occupations produce a contrary effect, which are carried on in a posture, unfavourable to a free expansion of the stomach, as weaving, but those also that scarce allow more range of motion than the oyster enjoys, though there be nothing injurious in the posture.

Who would not desire to have an accurate acquaintance with the substances, especially if there be any in common use, which impair the coagulating or solvent powers? We cannot make direct observations upon the interior of the human stomach; but we have animals, very closely resembling man in having a single and equally thin stomach, and in

feeding on flesh and vegetables promiscuously. And what we can observe of the effects in our own species agrees perfectly with the phenomena in animals, so nearly a-kin to him in this respect.

The habitual ingesta or substances received into the stomach, that prove most hurtful to its operations, are intoxicating or fermented liquors. In order to observe the first effect of these liquors, when of considerable strength, I caused an equal quantity of the same food to be given to two young dogs of the same litter. Immediately after feeding, three drachms of spirit of wine of commerce, mixed with a single drachm of water, were poured down the throat of one of the animals. In five hours both were opened within a very few minutes of each other. The animal to which the spirit was given, had its stomach nearly twice as full as its fellow. The bits of flesh were as angular as immediately after they were cut by the knife at the time of feeding. They were also as firm in their substance. In the other dog, these angles were rounded off, and the pieces throughout much softer. Opium, the intoxicant of the countries where fermented liquors are forbidden, has been observed to have precisely the same effect. "In dogs who

“ have swallowed a large dose of opium (as
 “ three grains) the peristaltic motion of the
 “ stomach and intestines is much lessened or
 “ totally suspended ; the food last received
 “ into the stomach remains indigested, and
 “ the bowels are more than usually empty.*”

Strong liquors are equally productive of indigestion in man. Many hours, and even a whole night, after a debauch in wine, it is common enough to reject a part or the whole of a dinner undigested.

On the Rhine and in Bavaria, during the years 1797, 1798, and 1799, the scarcity of fodder and the prevalence of disease rendered it necessary to destroy a great number of horses, employed both for the purposes of agriculture and of war. Mr. PILGER, an active experimenter, availed himself of so favourable an opportunity for collecting a number of interesting observations on the effect of poisons or strong stimulants. His experiments were made upon near two hundred horses, with arsenic, corrosive sublimate, barytes, opium, belladonna, cicuta virosa, laurel-water, distilled spirits and with wine.†

* Whytts Works, 4to. p. 181, &c. *Kauu impetun: faciens.*

† Versuche durch den Galvanismus die Wirkung verschiedener gifte und arzneimittel--zu pruifen—Giessen. 1801.

MR. PILGER found that forty grains of arsenic, given at once, produced no other apparent effect than a slight transitory pain in the stomach of a horse. He then administered four grains a day, in doses of a grain each, for five weeks, and upon destroying the animal at the end of this time, found the stomach shrivelled; the villous coat dry and rough; that important organ the liver, as also the spleen, altered in their organization.

Belladonna and undiluted æther occasioned a shrivelling of the innermost coat of the stomach as considerable as if it had been long held close to a brisk fire.

“ I have,” continues the author, “ given
“ a number of horses wine and brandy so as
“ to raise them to a sensible degree of exhi-
“ leration. Upon these occasions I constantly
“ found that brandy gave the interior of the
“ stomach a shrivelled appearance; that it
“ had encreased the orgasm of the blood-
“ vessels of the intestines,* and produced
“ congestions in the brain—which I did not
“ observe from wine in this dose.”

* The blood-shot appearance of the intestines indicated that such an orgasm, or violent action of the blood-vessels had occurred.

“ But when I gave either wine or brandy
“ enough to cause intoxication or staggering,
“ to induce sleep or to make the animal
“ drop, and in this state had it killed, the
“ brain was always much charged with blood,
“ the orgasm in the fine vessels of the intes-
“ tines strong, and the stomach shrivelled.”

Except in case of a fatal stroke of apoplexy, immediately brought on by intoxication, we cannot, as I have said, procure sensible evidence of the primary operation of wine and spirits on the structure of the healthy human stomach. But that they impede digestion, as in the example of the dog, and that they alter the texture of the fine inner membrane of the stomach, as in that of the horse, we have every reason to believe from the history of those, who indulge in their use. For how often do we see our drunkards and sots so far deprived of the power of digestion, that almost every portion of food shall be thrown up nearly as swallowed! Now in what way shall we apply the knowledge we have acquired concerning the gastric processes, to the explanation of this phænomenon? Is it not rational to conclude that what, on the very first occasion, changes the appearance, while it impedes the action, of a very delicate organ, must, by many

repetitions, establish an alteration of structure, and destroy the action altogether, or at least injure it permanently? The apparatus for secretion being no longer the same, the former coagulating and solvent gastric juices can no longer be poured out upon the food. The comparison of the facts respecting the two perforated stomachs seems to shew that milk curdled less readily in the Dublin patient, who made so extremely free with intoxicating liquors. I propose to ascertain by precise experiments whether a mixture of spirits and of wine with the food of animals will not impair the coagulating power of the stomach.

SPIRITUOUS LIQUORS in what state
MOST INJURIOUS.

The stronger the worse. The injury from any fermented liquor is to be measured by the quantity of alcohol or ardent spirit, which is to be obtained from it on distillation. In the relation of Mr. PILGER's experiments, it may be observed that brandy or distilled spirit, when it was given only to the first stage of intoxication, produced phænomena, which wine, given according to the same measure, did not produce. In their imme-

mediate action upon the habitual drinkers of both, gin, rum, brandy and strong distilled liquors of whatever denomination differ essentially from wine and ale of the ordinary average strength. The former, if very largely swallowed, will generally produce instant death; if less largely, a state of frenzy, with which, in that degree, mere wine-bibers are for the most part unacquainted. In common life, it is true, we do not meet with accurate comparative experiments; but from what we may observe, we may lay it down certain enough, that the same quantity of intoxicating fluid will occasion remote as well as immediate effects of a very different kind, according as it is taken more or less concentrated.

In the Southern states of Europe, public opinion is exceedingly severe on the use of liquors, that affect the head, undiluted, even when sparingly taken; and on the subject of intoxication it is nearly inexorable. With us, the strongest wines may be every day swallowed without reproach in a quantity scarce consistent with the regular functions of the brain. But the difference between drinking port or madeira and brandy is the difference between respectability and disrepute. What can be the foundation of the distinction? What other than the more

palpably baneful operation of spirits? Every one condemning what no one can deny to be detrimental. Were the consequences the same, emptying a goblet of brandy would have been in all countries an act as free from censure as taking a bason of soup; and dram-drinking would be no secret practice.

The lovers of the bottle flatter themselves that care in selecting wines will exempt them from evils, which they cannot dissemble to themselves that wine produces. The convivial possessor of ample cellars, whose pipes regularly ascend to the honours of his table in the order of their standing, praises his good fortune, when he compares himself with young men at the university, condemned as they are to regale upon home-brewed and unmellowed wines. But the distinction, I am afraid, rests upon a difference, little in point as to health. It is the result of common observation, confirmed by unvarying medical experience, that among country gentlemen, citizens, the frequenters of the common and combination room, the associates of the mess, the farmer, the merchants' clerks and the artisans that croud the smoke-shops in places like Birmingham, a large proportion injure their digestive organs, whatever be the coarseness or tenuity, the purity

or adulteration of the liquors, provided they be about the same strength and taken with nearly equal freedom. Dissimilarity of constitution, of occupation, of exposure and the like will produce a dissimilarity in the result; and but seldom the oil, the mucilage, extractive matter and other vegetable principles that accompany the spirit in the stimulants, habitually used. — The difference between the effects of the most clumsily manufactured and the purest wines, when of the same strength, is perhaps scarcely equal to the difference between ninety nine and an hundred. And what difference exists, is not the smallest consequence to our present enquiry. — Peculiar mischief is imputed to *new* rum in the West-Indies, but ought we to be persuaded that this is owing to its age, until old rum is given to soldiers and sailors with equal profusion? — One thing only, on a comparative view, would appear to make somewhat in favour of spirits and of wines, long kept — They lose of their bulk; that is, they become weaker, and the alcohol is the part that evaporates. *Long* keeping however seems necessary, in order that this effect should take place in any sensible degree. For new musty liquors remain at least equally strong for a time by the slow

conversion of their fermentable ingredients into spirit.

The more quickly also any considerable quantity of intoxicating liquor is drank, the more injurious to the organ to which it is immediately applied, and to those upon which it remotely acts. Healthy people, I presume, would be sensibly less injured by a course of vinous stimulants, if the quantity taken in the afternoon was regularly distributed through the day. In grave diseases of debility, we find that cordials and strengthening medicines are given at stated intervals; and in affections of less consequence, the same rule ought to obtain. Immediately after a meal seems in general the most improper of all periods, where there is any purpose of health in view. Proper food in proper quantity is exciting enough for the strong; and without caution, is apt to be over-exciting for the weak. Extraordinary stimulants should therefore be reserved for the seasons when the powers of the system begin to flag.

*In whom Digestion is most liable to Injury
from this Cause.*

There are an infinite number of facts which shew that the organization of children is, in

general, but apt to suffer from many classes of violent agents. The writings of anatomists are full of melancholy examples of the most monstrous deformity, evidently produced by pressure in the early and more plastic state of the several parts, of which the body is composed. Examples, somewhat less striking, occur every day in spite of the more rational methods of management, recently adopted. Fatal local ailments are constantly produced by blows and falls. The same law obtains with regard to the powers that, by their specific action upon the stomach as a living organ, throw the system into strong commotion. Medical practitioners, much conversant among the poor find them perpetually stinting the growth, and destroying the constitution, of their children, by their ill-judged kindness in sharing with them those distilled liquors, which they swallow with so much avidity themselves. Among the causes, fatal to the health of the higher classes, the allowance of wine, that is so often served out to the children, short as it may appear, deserves to be considered as not the least considerable. Mr. SANDFORD, surgeon at Worcester, in his useful and entertaining tract on wine and spirits, relates the following observation, which may be confirmed by thousands equally certain, though made with less precision. "A late

“ ingenious surgeon, occupied for a great part
 “ of his life in experiments equally well con-
 “ ceived and accurately executed, gave to one
 “ of his children a full glass of sherry every
 “ day after dinner for a week. The child was
 “ then about five years old and had never been
 “ accustomed to wine. To another child,
 “ nearly of the same age, and under similar
 “ circumstances he gave a large china orange
 “ for the same space of time. At the end of
 “ the week, he found a very material difference
 “ in the pulse, the heat of the body, the urine
 “ and the stools of the two children. In the
 “ first, the pulse was quickened, the heat in-
 “ creased, the urine high coloured, and the
 “ stools *destitute of their usual quantity of*
 “ *bile*, whilst the second had every appearance
 “ that indicated high health. He then reversed
 “ the experiment: to the first mentioned child
 “ he gave the orange, and to the other the wine.
 “ The effects followed as before—a striking
 “ and demonstrative proof of the pernicious
 “ effects of vinous liquors on the constitution
 “ of children in full health.” The deficiency
 of bile is full evidence of the injurious effect of
 the wine upon the digestive organs in this double
 experiment. And the result itself must be
 regarded as the more satisfactory, since the
 author, to judge from the terms in which he is

described, could have been no less a person than the late Mr. HUNTER.

If direct proof be wanting of the power of diluted spirit to destroy both appetite and digestion, it may be found in a very marked degree, wherever this kind of liquid is given to children a little freely. During the late distressful seasons, some poor families were driven to that dire expedient by motives of œconomy. A lady—Miss ELIZABETH SEWARD—met with a family of poor children, whose pale faces and emaciated bodies forcibly attracted her attention. Upon enquiring of the mother how they were fed, she was informed that “ *they did not eat much, and that what they did eat was not sufficient to nourish them without gin and water. It was scanty vegetable fare.*” The lady, after stating to the woman the pernicious effects likely to follow from such a regimen, advised her to purchase a little animal food with the money she expended in gin, and to give the children water to drink with their meals—“ *Lord, madam,*” replied the poor woman, “ *if I was to do that, I should never be able to satisfy them in these hard times. I was used to give them water. But then they were always hungry: and I could not beg or buy victuals enough for them.*”

The glass of wine, we ought to observe,

had a similar effect in the first of these cases to the gin and water in the second. Indeed its operation in a single week must make every person, open to palpable facts, shudder for the consequences of a long continuance of the same habit. Why then not profit by the example? The false shame of standing single amid a host of bad examples, is out of the question. Children know nothing of that factitious flatness of imagination, which in debauched adults calls for relief from the enlivening potion, with a voice as imperious as that, in which the natural appetites of hunger and thirst demand the means by which they are respectively aswaged. What happens so seldom in cases where the constitution is at stake—Propriety here stands against Impropriety, single and unsanctioned. As the greatest authorities are against wine; as there are none worth regard on the opposite side, and above all, as there is so little danger of being thought odd, why risk the early destruction of that organ, which may be regarded as the great regulator of the inward man? Since as that stands affected, so do we feel to ourselves. So also do those, with whom we live, find us; and how often does the vitiated state of the stomach and its dependencies express itself in the countenance as clearly as the disastrous tidings in the features

of him, who had to tell PRIAM that his Troy was lost?

Doubtless there are cases where the violent stimulation of wine is not more than sufficient to bring back the digestive organs, and the general system of children, to their healthy condition. But even as a medicine, wine ought perhaps hardly ever to be administered to young people in their chronic ailments. Drugs may commonly be found, which will equally answer the purpose; and these would without difficulty be relinquished, when their continuance would be as hurtful as wine to a healthy child. Or it may be good policy to give a disagreeable drug in wine, that the vehicle may become hateful by association. If the case should be thought such as to render a substitute inadmissible, dilution may still be proper, and the utmost care should be taken to administer the diluted liquor so as to prevent faintness and chill, not to produce excitement and heat.

Children will not crave this dangerous beverage, unless they are instigated by example or have been taught to relish it by frequent use. But what shall we say to our young men, and to men of genius, who derive such exquisite delight from the glow of imagination, and who are therefore apt to embrace with so much avidity every means of kindling this glow?

According to the general feelings of mankind, (and these afford the only true criterion) that effervescence of the animal spirits which takes place just on this side of intoxication, ranks among the highest of human pleasures. It has the advantage of being enhanced by participation; and if the human frame were otherwise constituted, the free use of wine would not only be an allowable indulgence but might properly be inculcated as a duty. For there are none of the ingenuous arts, of which the cultivation has a more healthy effect on the mind, and a more humanising, than the frequent excitement of the chearful sympathies.

At some future period, a sufficient fund of hilarity will be discovered in social exercises, and in the communication of ideas, belonging to literature and science. The accumulation and diffusion of knowledge directly tend to render the human species independent of wine. Not an elementary treatise or course of lectures perhaps but is contributing towards the eventual restoration to CERES of that extensive domain which BACCHUS has been so long suffered to usurp. All that is wanting is a stock of materials, which may serve in common for the production of agreeable feeling without damage to the organization. That this is to be had, we may learn from the lives of many

individuals of our own country, from WALLER the poet, to the poet and physician DARWIN. Some of these furnish examples of perpetual sprightliness with perpetual abstinence from wine; and others, what is stronger still, of sprightliness unimpaired by the disuse of wine after free indulgence. We need look but a little way abroad to discover nations airy and alert in proportion to their abstemiousness from strong fermented liquors. There remains to be conferred upon our own nation a benefit of which the author would deserve infinitely more than any legislator, warrior, or inventor, who has obtained celebrity among us. It is a simple, and would probably be an easy undertaking to persons of influence. I mean a plan of social intercourse, independent of the pleasures of the bottle. Such a plan would seem to be a natural consequence of the interest, which we have lately seen the higher orders of society taking in an Institution for the diffusion of knowledge in the metropolis. The interest by which people are to be drawn and held together could be drawn only from the objects of nature, the processes of art, and from the range of polite letters. The meetings should be made more promiscuous than our parties by the introduction of boys and girls at the age when they begin to use their reason. A few of the best informed inhabitants of different places must at

first be the active persons, and provide entertainment for the circle. But the most passive part of the company would not find themselves more listless than at the places they now frequent. In many there would be kindled a zeal for information which would make them find a new pleasure in existence. And in all, the exclusion of the petty malignant topics of common conversation would tend to create a better spirit, and more happy disposition. To describe the probable effects of such a system of communication among families, *gradually* substituted for the present, upon temper, health, and morals, would be worthy the pen of our ablest author of fictitious biography. The state of society as it existed at Geneva before the troubles in Europe, would afford many traits towards the picture.

The period of majority by law has continued the same. But the period of majority by custom has been greatly curtailed. The good effects, which the reception of young people into the society of their seniors nearly on a footing of equality, have been perhaps hitherto more than counterbalanced by giving an earlier date to the habit of drinking a few glasses of wine daily. If it be but one or two, the observation will still hold in a multitude of instances. I am well assured that shortly before the war an

ancient female at Calais, who had had opportunity of seeing most of the English travellers, remarked the latest flights to have had in general, a more puny and worn out appearance than their predecessors forty years before. It is what the habits of many of our boys would lead us to expect. The injury to the digestive and other organs from the error in diet, which I am here considering, is certainly not the sole cause; but it must very materially contribute to the difference, if it exist.

That *all*, who begin early and continue without intermission, the use of strong vinous liquors are not injured, is a certain truth; and we are perpetually reminded of the exception as an excuse for a practice so universally marked by medical observers as destructive. But neither do *all* who are exposed to its contagion catch the plague? And yet is not the hazard sufficient to induce every man in his sober senses to keep out of the way of infection? That every man shall become a valetudinarian, more or less miserable, if he daily drink a quarter of a pint or half a pint of port wine from his fourteenth, fifteenth, sixteenth, seventeenth, or eighteenth year, is to the full as probable as that he shall have a dangerous disease if he come within reach of its effluvia.

Among those of a weakly constitution there

are some who take wine as a luxury, and unexpectedly find it their cure. This, however, is a fact only in favour of wine as a medicine, and by no means as an article of diet. It is certain that were the most powerful productions of nature and preparations of the laboratory, whether they rank in our estimation as drugs or as poisons, to be habitually used, they would have a deleterious effect upon the majority, and prove salutary in single instances.—For the former part of this assertion we have the experience of those extensive regions, where opium is in daily use. Our most authentic travellers leave us no doubt about the wretched state of the opium-takers in general. It may be more difficult to find direct authorities for asserting that this powerful juice is ever beneficial to the Orientals. But the analogy of cases at home will supply this defect; and if it were as liberally used in Christendom, it would also sometimes perform the same work of supererogation that wine does; it would not only soothe and exhilarate, but occasionally heal. In the countries where asa-fætida is habitually employed in mixture with the food on account of its cordial operation and particularly to promote digestion, it must sometimes remove and keep off indisposition. The five-hundreth, and per-

haps even the hundreth or the fiftieth part of a grain of arsenic might probably be substituted among us in the place of the usual allowance of fermented liquors without more detriment on the whole, and with as great accidental advantage in particular cases.

All considerations, we see, combine to shew that fermented liquors by their activity class with the most powerful and therefore with the most hazardous drugs. Of course, their use ought always to be a point for medical decision. From the healthy stripling, not yet habituated to them, they should, in every shape, if possible, be withheld. Healthy men, under the age of fifty, should gradually emancipate themselves from so pernicious a habit. Their determination should be more prompt as their constitution has suffered less from time, disease, accident or intemperance. As to persons more advanced in years, it would be happy if they could be prevailed upon to call in the aid of wine merely to prevent themselves from sinking into languor, and never to raise their feelings above the comfortable pitch.

Where the spirit is willing, but the flesh weak, I should propose a compromise between indulgence and health. One fourth part of the usual fermented liquor, if it be wine, or cyder,

or mead (which old British beverage is still in use among certain classes in the counties adjacent to Bristol) should be at first withdrawn, and the measure made up by water; afterwards one half or two thirds. The mixture may easily be prevented from tasting raw or vapid by adding water impregnated with fixed air or carbonic acid instead of plain water. The art of preparing artificial mineral waters is now spreading in every quarter, and the alkaline or Seltzer waters would perfectly answer the purpose, and, as we shall presently find, correct a property in wine, by which it is perhaps even more injurious to the weak stomach than by its direct operation. Where the mineral waters are not easily procured or where they contain too much gas for the stomach, the common glass machine will impregnate water sufficiently for this purpose; and its expence would soon be saved by the diminished consumption of wine, an article now become so costly.—As to malt liquors, their strength is easily lowered by withholding a portion of the material that supplies the spirit.

Undefined **INDISPOSITION**, and *Specific* **DISORDERS** produced, or whose production is favoured, by the operation of *Vinous and Spirituous Liquors* on the **DIGESTIVE ORGANS**.

Some disorders are curable by a variety of means, which have nothing in common in their composition, and probably nothing in common in their mode of operation. Thus the ague will yield indifferently to Peruvian bark, to arsenic, and to an impression upon the mind. Conversely, the same disorder may be produced by a variety of causes, physical and moral. There is probably no one complaint produced exclusively by fermented liquors or by analogous stimulants. But they are the most frequent cause of many complaints, and, where they do not operate alone, they reduce the system to a state in which it is overpowered by enemies that otherwise would make no impression. Nor is it the *Sot's or Drunkard's progress* only that I delineate here. Great multitudes come to the same misery with the drunkard and the sot without ever numbering wine among the pleasures of existence, and who have always filled their glass scantily, in involuntary imitation of,

or reluctant compliance with their associates. But there are actions, in which it is fatal to bear the smallest share or even to be present during their perpetration. Murder, and that kind of slow self-murder, which is committed by the abuse of diluted poisons are of the number.

To pine in a uncertain comfortless state before falling into a well-marked disorder, is not less frequent, than to linger on a sick-bed before being permitted to enter the asylum of the grave. The drinker of too much wine commonly finds himself what in medical phraseology is called *cachectic*, or as some familiar writer terms it, *I don't-know-howish* for a long time before he is compelled to resort to the practitioner of medicines. However trifling his daily allowance, let him not flatter himself with the idea that it is impossible what he feels can be owing to so small a quantity, but make a half year's trial by first diluting his vinous beverage, and then quitting it, if possible, altogether.

One of the first indications of mischief from wine taken constantly in inoderate quantity, when it may be supposed to act as an alterative, is a sense of dissatisfaction and being ill at ease some hours afterwards. The young and sparing

votary of Bacchus cannot be expected to tremble all over on first rising, and to exhibit to every spectator, in a lack-lustre eye and cheerless morning visage, the effects of his afternoon libations. But what the veteran dram-drinker is unable to conceal, the other will be sensible of, in a proportionate degree, on self-examination. He will probably awake hot, restless and heavy. The early sun will seem an intruder. He will shake off his drowsiness reluctantly, dress with languor, and be indifferent about food. The mouth will feel clammy, the stomach uneasy, till revived a little by the stimulant operation of warm tea or coffee. After stretching and yawning till the limbs are properly awake, he will eagerly close with any scheme, which promises to raise emotions or to relieve that listlessness, which dinner and the circulation of the glass are required completely to dissipate.

Habits like those of MEADOWS in *Cecilia*, will be created by the enfeebling power of small portions of wine, regularly drank. This indifference and apathy, so unnatural in the prime of life, must have been originally felt, not causelessly assumed. It may be convenient policy, doubtless, to render them fashionable. But juvenile ardour and alacrity must have been first extinguished in those, who set up that sort

of demeanour, which implies the absence of both, as a pattern for imitation. Deformities of figure and of character must exist in people of influence, before their inferiors will agree to punish themselves by ostentatiously cramping the free play, and distorting the erect growth, of their nature. No mortal would ever have thought of making apathy the mode, but a worn out beau.

In the course sometimes of a very few years there takes place general want of comfort, accompanied by particular uneasiness about the region of the stomach, except shortly after that organ has been roused into temporary energy by more or less repletion. There is yet no severe or alarming symptom. Though scarce a day passes but the alimentary canal is sensibly out of order. These irksome sensations, however, come and go; and the person who experiences them, can continue uninterruptedly his business, his studies or his pleasures.

It is now that vinous liquor begins to act as a two-edged sword. By its first operation, it increases that indigestion, of which it has already so largely contributed to lay the foundation. Its second is little less pernicious to the enfeebled viscera. This depends upon the change into vinegar, which wine, however,

genuine, as well as ale, and other fermented liquors, undergo, as also the acescent extractive vegetable matters with which they are incorporated.

Vinegar, taken frequently and freely, we know to be destructive to the stomach. When slenderness of waist was particularly in request, many women totally ruined the digestive faculty by vinegar. I have known instances where a fatal atrophy, by the acknowledgment of the patient, was thus induced; and to physicians of longer standing such cases must, at one time, have been familiar. Since the common use of nitrous acid, medical practitioners must have had the most ample opportunities of observing that the action of this and the other mineral acids upon the first passages is totally different from the action of acid fruits. Perhaps it is different from that of the pure vegetable acids, for those are alterable by heat, and in some situations, analogous to the human stomach, where the others are not. Of vinegar in particular, compared with mineral acids, the action on the stomach of horses appeared to be highly deleterious in the experiments of Mr. PILGER.* This he himself considers as the

* “ Concentrated vinegar, (says this observer,) acts in a far more stimulating manner than the mineral acids - - -

most remarkable result he obtained : his best informed readers will agree with him. And it is no inconsiderable corroboration of the other proofs of its power to injure the feeble human stomach. Indeed were a person, who is hourly reminded that he carries such a debilitated organ under his belt, to be offered ready-made vinegar alone, the idea would go near to bring on a fit of stomach-cramp. Yet he may be assured that the wine he drinks not only attacks the coats of the stomach as wine, but that it afterwards returns to the charge in an acidified form. And not only so, but it assists in turning sour the vegetable portion of the meal, upon which it is poured. Let it not be supposed that wine does not become sour upon the stomach, because no heart-burn or sourness in the throat is felt. The processes by which indigestion is promoted, must have been carried

given without addition of water, it excites the most dreadful spasms, and produces fatal symptoms. When a horse is killed by it, there appears [little or] no irritability immediately after death."

"To ascertain this, I drenched several horses, one after another with a pound of concentrated vinegar. If I had them killed, some convulsions took place upon arming the nerves. But they were most exceedingly weak, when the horse was left to die of the effects of the vinegar."

to a greater length than I here suppose, before these troublesome symptoms attend it, except on particular provocations. For a long time, there may be no risings; and the acid contents of the stomach may pursue their natural downward course, though with a degree of irregularity and inconvenience. There wants a series of experiments on the acidity of the recent alvine discharges after various kinds of food. They would throw great light on the different articles of diet, and be useful to dyspeptics, whether infants or adults.

Distilled spirits and water are held in great dread by many, who take wine and ale of the same strength, without scruple. The apprehension seems ill-founded. Mere diluted spirits cannot possibly do more harm by their primary operation: and the secondary does not take place. I do not notice this difference in absolute recommendation of *spirits*. The purpose, stated at the head of this essay, can be very seldom realised by taking either wine, or lowered spirits as the substitute of wine. But the public is deeply interested in being made acquainted with every fact, which may tend to destroy the superstitious belief in the innocence of genuine wine, as compared with other liquids, equally intoxi-

cating. Opium, because it does not turn into vinegar, will often be useful in breaking the fall from wine to water, when just alarm shall lead any one to determine upon the reformation of his diet. But here medical counsel should interpose. There are very few dyspeptic persons, however, in the incipient stage, who will not receive benefit from vitriolic, nitrous or marine acids, mixed with water and sugar so as to suit the palate, and not strong enough to set the teeth on edge. The loss of fermented beverage will be little, if at all, felt on account of the grateful effect of these acids; and they are very powerful in checking that acescency, which the former so strongly promote. I know no reason why almost any sufferer from indigestion may not make trial of the *mineral lemonade*. To shrink from this proposal under the pretext of being unwilling to *tamper with strong things*, betrays too gross ignorance, or else very ill-timed prudery in those, who have not been afraid to shrivel up and scorch the most sensible and delicately formed of their internal parts, by the daily and immediate application of liquid fire.

Indigestion establishes itself by degrees in full form. It is attended by loathing, rejection of food, by constantly distressing flatulency, tremors, comfortless nights, ema-

ciation, and decay of the intellectual faculties, A very great proportion even of the moderate drinkers of our stronger fermented liquors experience some of these evils. Those whom the poet describes as—

Once fellow-rakes perhaps, now rural friends—

find that in place of being partners in pleasure, as in their better days, they have now only to condole with one another upon the torment of a bad stomach. You shall perpetually hear from one, when he is offered some of the delicacies that bring up the rear of our dinners, that he *never deals in pastry*—from a second that he *does not dare to venture upon sweets*—from a third that *he likes such and such a kind of fruit very well, but that it does not like him*. These are the common avowals of a depravation of the digestive organs, owing in great measure to the cause in question, if not altogether induced by it. Nothing is more fallacious than the common saying that every man of sense at 40 knows what is good for his constitution. The party himself therefore, though a man of sense, may not be thoroughly aware of the mischievous power of what is reckoned a moderate daily dose of wine--after all his experience; though it is most likely

that he would have checked himself, if he had only been apprized, before his habits became fixed, of the conditions on which alone he could certainly expect the organs of digestion to continue to perform their functions pleasantly during life. SALLUST, in comparing man and brute animals, mentions as a mark of inferiority in the latter, that nature has formed them *obedient to the belly—ventri obedientia*. Now to understand and practise what is due to that central part, is really a great perfection, and such an one as few are happy enough to be endowed with. Indeed the interest of the palate, well understood, coincides with that of the alimentary canal, and of those remoter organs, which perform their offices well or ill, according to the state of the first passages. For besides the variety of uneasy feelings, with which the dyspeptic valetudinarian is harrassed both in his periods of wakefulness and sleep, he must either forego those things that have the most agreeable relish, and which perpetually furnish innoxious enjoyment to others, or else he must do penance by the hour for every minute of indulgence. In the constitution of the human body, there is surely no reason why the grown man should not be able to feast, with as much impunity as the growing boy,

upon the fruits of our own seasons, upon those of countries more favoured by the sun, and upon the most savoury preparations of the culinary and confectionary arts. The impediment arises, in the majority of cases, from the injury, done the stomach by the products of the vinous fermentation, with frequent assistance no doubt from unhealthy occupations and uneasiness of mind.

Too light cloathing seems to have no inconsiderable share in weakening the stomach. In sedentary people the belly is apt to feel cold from insufficient covering; and in this respect the antient materials and fashions of dress have an advantage over the modern, particularly in men. It is impossible that the region of the stomach should be habitually chilled without injury to digestion.

One troublesome circumstance belonging to indigestion in all its gradations deserves particular elucidation. This is the production of air in the intestines. It must be considered that the quality and quantity of the matter, exposed to the powers of digestion, are no less entitled to regard than the state of those powers themselves. In the heat and moisture of the stomach, both kinds of food run into fermentation; vegetable substances very rapidly, and with prodigious

generation of air and acid. When cattle eat too greedily of dewy clover, notwithstanding the undepraved condition of their organs, they are sometimes burst by the abundance of elastic fluids, thrown out in the fermentation of this plant. But it is among the properties of the juices of the stomach to check, and in ordinary circumstances, to prevent the attractions, upon which this fermentative process depends, and to induce others of a quite opposite nature. From the concurrent testimony of many observers it appears, that in the healthy state, when the organ is not overloaded, and nothing indigestible has been employed as food, neither air nor acid are to be discovered in the alimentary tract.

Flatulency, therefore, may be assumed as the measure of indigestion. When arising from vegetables, it never perhaps fails to be accompanied by acidity, even though that acidity does not shew itself by any sensation. The gastric fluid restores the sweetness of putrid flesh; and that of the human stomach among the rest, seems to have great power in preventing animal substances from undergoing the putrid fermentation. So that the most dyspeptic are hardly ever troubled with flatulency, when they adhere strictly to an animal diet; that is, when they avoid

sugar, wine, bread, and every thing of vegetable origin. Such a regimen, however, requires excessive self-denial; and is, by no means, to be adopted without the most urgent considerations. For though it may prevent inflation for the time being, it may produce other bad consequences, and certainly will have little tendency to remove indigestion, except as it implies the absence of one grand exciting cause of this malady. No one should be content with his stomach till it has recovered that power of digesting vegetables, which it possessed in the light and joyous spring of life, and which it retains to old age, when uninjured by accident or imprudence. It is this class of substances, if either of the two, which seems to have the fairest pretensions to be regarded as the natural food of man.* However this may

* Of all animals the ape comes nearest to man in the structure of his mouth, teeth, tongue, gullet, stomach, and abdominal viscera. This implies a corresponding similarity in the function of digestion (*Daubenton*). And wild apes live exclusively on vegetables. So likewise do men in some of the most populous regions of the globe. To balance these arguments, the Africans on Orange river are asserted by Dr. Fordyce to live solely on animal substances. And there are other instances from the Ethiopians of Herodotus downwards.

be, as few of us will, even supposing we could, do long without vegetable food, the interest we have in possessing digestive organs, capable of subduing its disposition to ferment, does not require further illustration.

No process in human life is more common than sinning against the stomach and repenting shortly afterwards. Many people, with digestive organs beginning to fail, sit down with a resolution to avoid such and such things, from having lately found them always to disagree. And if the articles they have reason to avoid were never to come into sight, they would hardly excite a wish. But example unites its influence with opportunity, the constant subduer of human virtue, and the firmest purpose proves glass in their way.—*I had made up my mind not to meddle with any of those green gages to-day—I must try one however, they look so very fine.—One does but instigate desire. Another and another succeeds, till a sensation of cold in the epigastric region, approaching to an ache or a cramp, gives warning of what is to follow, and the alarmed glutton desists from gratifying his palate at the expence of his stomach. After a short time he cries out in his anguish—“I wish I had not suffered myself to be tempted by those vile plumbs.” At*

least this penitential sentiment is felt almost as often as the *desert* comes before them, by a number of sensible and considerate people, if it be not always expressed.

There is perhaps but one effectual way of correcting this inconvenient weakness of character. The greater part of mankind seem not only to lose the benefit of the experience of others, but of their own. They suffer their health to be undermined and their ease to be perpetually broken in upon, for want of fixing their attention stedfastly upon their feelings, and connecting the circumstances, upon which they depend, strongly together in the mind. Ideas, stamped upon the memory with great distinctness, have undoubted power in deciding the will, and very frequently they prove capable of resisting the seductive tendency of impressions, made by present objects. To pass our table-transactions in frequent review, as the golden verses ascribed to PYTHAGORAS recommend with regard to our whole conduct; to dwell upon their consequences, particularly their disagreeable ones; to call up in lively colours before the imagination that delightfully free and unencumbered state of all the faculties, which accompanies an easy digestion; to compare what is lost and gained by

throwing into the stomach materials that puff it up like a balloon, is our best moral preservative against the danger of becoming dyspeptic; and without this, our physical resources will hardly get fair play.

Among the physical, none is more essential than the proper regulation of food. The usual English breakfast is nearly as bad an one as it is possible to contrive. Let those who doubt, make a mixture of sugared tea with saliva and bread and butter, and keep it in a temperature of 96 or 98 degrees. If the stomach be so far enfeebled that its juices cannot restrain the fermentative process, the result will be exactly the same, whether the materials lie in a living pouch or in an earthen pot. Every morning regularly a degree of that misery will come on which I find delineated in somewhat broad strokes, by a foreign medical writer, under a fictitious signature.*

* “I am a person who could spend his days in decent tranquillity along with his family, were we not almost constantly plagued with one inconvenience. When I have taken my tea in the morning with my wife and three daughters, each of us repairs to his employment. I go to my window and watch the people pass. My wife stations herself with her work-bag in an opposite window; and my three daughters occupy the middle of the room

The general still life of one sex, and of many of the other, causing the circulation to languish, the extremities to chill, and the secretions to be imperfectly performed, the alimentary canal in a few hours after breakfast begins to suffer from the sharpness of the fermented mass; and volumes of air, moving about in all directions except in the proper one—a sense of hollowness within—gnawings at the pit of the stomach—torpor of the bowels, and other miseries, pervading the whole system, but too various to admit of description, fill up the principal part of the time between breakfast and dinner.

“with their tambour-frames. Scarce have we seated ourselves, when there arises a murmur, as if the room were a Jew school. Sometimes I ask my wife:—*what is it you say, my dear?* and the reply always is—*nothing; it was only the wind*—. It often rumbles as loud in my daughter Charlotte’s body, as when an engagement is fought in a raree-shew box; the young one will raise a croaking as if she carried a number of frogs in her pockets; and in the middlemost it chirps like a hatch of young birds. ——— We are ashamed of going into company. For when we are seated in the circle with the utmost decorum, one stomach or another sets up such an uproar, that the persons present are obliged to bite their lips for fear of bursting into a loud laugh. We dread nothing so much as the usual pause in conversation when a topic is done with.” ——— URBAN FLATUS.

In order to understand clearly the effect of an ordinary dinner, it will be necessary to consider the gradations of debility in the stomach. If any quantity of acescent food, (as for example, that usually taken for breakfast) be imagined to be divided into a number of portions, in the first degree of indigestion one of these portions may be supposed to follow its propensity to ferment, while the rest are subdued into a mass, fit to recruit the body. With the increase of inability in the gastric juices, these proportions change, and always to the unfavourable side. Along with the impaired faculty of the stomach to furnish proper digestive juices, the other faculties of the intestinal cavities become impaired. The muscles, in particular, grow too feeble to perform the office of propulsion.

In the early stage of indigestion, therefore, the effect of dinner will be to give relief for a time. The muscles will be invigorated and the elastic fluids, the most moveable part of the contents of the bowels, will be driven downwards*. In the sequel, however, the

* The same thing happens also at breakfast; soon after which more than elastic fluids usually passes, when persons are tolerably healthy and regular. For the bowels have been

former grievances will recur sooner or later, and with more or less aggravation, according to circumstances. The souring of fermented liquors is one of the principal determining circumstances. Another, is the addition of a meal from the garden, to a meal (probably too full an one) from the kitchen. Common observation has long since ascertained the peculiar unseasonableness of fruit after dinner. But as long as the digestion continues weak, fruit in general, (except perhaps the best ripened oranges we get in this country, and those in sparing quantity) may be set down as improper, for there cannot but be injury from converting the stomach into a vinegar vat every day.

If the dinner and after dinner medley do not work sufficiently, there is a provision in our customs for promoting the fermentative process. The evening repast of tea and coffee will act upon them like yeast added to sweet wort.

all night labouring to forward the refuse of the food of the day before, which waits but for a little stimulation and a voluntary effort. From the effect of protracted sleep too, the alimentary canal is more susceptible of being moved in the morning than at any other time of the day.

In that stage of indigestion; in which a large portion of the breakfast escapes the action of the gastric liquor, dinner does but add to the distress of the patient. The first mouthfuls make an ungrateful impression. There is some approach towards an effort for their rejection. The body suddenly feels bloated, and it often becomes necessary to let the dress loose. It would seem that in this case the stimulus of the food produces a reflux of the flatulence from the intestines into the stomach. It is common for muscular fibres, when much weakened, to act in the direction contrary to the healthy; and we in fact find, in the worst dyspeptics, the greatest tendency in the wind to discharge itself in this way, that is, to be propelled upwards. One or more glasses of wine will considerably alleviate this uneasiness for the moment, and brandy still more effectually. For these violent stimulants rouse the muscular fibres into more vigorous action: the stomach contracts and expels the elastic fluids, in consequence of which the fulness is relieved. This temporary advantage, which seems to have introduced the pernicious custom of drinking wine repeatedly during dinner, is much more than compensated by the consequences, even within a few hours—

not to reckon the progressive injury to the structure of the digestive organs. A diseased follows different laws from a healthy part. It would therefore be possible that strong wine should cause more gastric liquor to be given out by the coats of a stomach, injured by wine, though the contrary is apparent in a sound state. There is however no experiment to countenance this possibility; and the increase of the peristaltic motion, as explained above, together with the grateful glow and temporary exhilaration produced by wine, when the dyspeptic take it along with their meals, is sufficient to account for all the phænomena.

The correction of this troublesome and dangerous infirmity is rendered difficult only by the influence of fashion, and the obstinacy of habit. For this purpose such a regimen should be adopted as suits the debilitated viscera; and such measures should be pursued as will restore to them their due tone.

For breakfast, there is the choice of milk diluted with one third or one fourth of its bulk of lime-water, or milk with mephitic alkaline or Seltzer water, supposing the gas not to disagree—or of milk and water with supercarbonated kali dissolved in it—or milk thickened with rennet before the whey and

curd have separated, in which tender state it is eaten in the Western counties under the name of *junket*. An infusion of some of the spices, as ginger-tea, or nitrous acid diluted with water and rendered palatable by sugar, will answer the purpose of a diluent. Sometimes one and sometimes another of the above liquids may be used; and that persisted in which is found to sit best, without the production of wind, of sourness or oppression. The lower their temperature the better, provided no chill follows. In the summer, they may soon be reduced to the temperature of the atmosphere without inconvenience.

Bread in its best form is a very objectionable article of diet for this class of valetudinarians. When new and impregnated with melted butter, it is nearly the most abominable that can be contrived. Bread, toasted thin, and eaten with unmelted butter, has rather less acescency than in other states, and in slighter cases this acescency will be corrected by several of the preceding liquors. But when the symptoms are severe, it must be altogether abandoned. Nor will biscuit answer better. As a substitute, flour baked grey,* and then boiled with milk to the con-

* This preparation of partially charred flour is described

sistence of a thin custard, will frequently afford sufficient sustenance, without exciting any commotion in the first passages. Various persons of weak stomach have found another very eatable substitute for bread in a pudding of suet, milk and flour, cut into thin slices and toasted. The most unexceptionable substitute for bread, however, is a sort of cake, prepared from the whites of eggs without any flour.

There is no invalid of the description in question, that cannot make out from his own experience a list of fruits and vegetables, which incommode him soon after he has swallowed them. I would most strongly advise every invalid to make out such a list: and indeed I am of opinion that to mark all the familiar occasions of pain and pleasure by a distinct memento would answer as useful a purpose in the art of living as buoys in that of navigation.

No two fellow-sufferers would find their accounts exactly to tally. In general, stone-

in Dr. Underwood's Diseases of Children. The flour should be put into a jar, partially covered, and be taken out of the oven several times, and stirred up from the bottom and sides of the jar, that it may not run into hard lumps, but the whole be equally baked.

fruit, nuts and other oily kernels, pease and beans would be noted as the vegetable substances most sedulously to be avoided. The character of turnips, greens, and cabbage would not stand much fairer. Raw vegetables would be altogether proscribed; and even potatoes be allowed in very sparing quantity. The grains in general rank with bread. So that till the stomach has received some accession of strength, a very small quantity of vegetable matter is admissible at dinner; and this should be thoroughly dressed, and would probably be better if stewed in gravy. The mineral lemonade will prevent the souring of this small quantity; and so will alkaline drinks. But the acid I think preferable, because it reconciles the palate to a longer continuance of animal diet, because it has considerable stomachic virtue, and also, because it will perhaps enable the constitution better to bear the subduction of vegetable matter.

There is one mistake under which I find dyspeptics commonly labouring, and into which I believe they are partly seduced by the treachery of sound. To a scheme of diet, framed according to our most accurate notions of the functions of the stomach, they will object that they can bear none but *light* things. By these they frequently mean

things specifically light, as mealy potatoes, and very porous bread, not things easily digestible, especially by them. Mealy potatoes and porous bread may indeed have some advantage over bread not well fermented and mere paste in solubility in gastric liquor, within the body or without, principally perhaps because it can get at a greater extent of surface. But they turn sour full as readily. The same idea of lightness frequently misleads the dyspeptic to give an imprudent preference to liquids over solids, and sometimes to a liquor so very acescent as water-gruel. But a little attention to their feelings will soon convince them that liquid food, even that least disposed to acescency, is oppressive in comparison with solid, and that it should therefore be sparingly taken. The kinds of liquor, however, specified above, being either coagulable with ease or preventive of acidity, or invigorating, will bear very well to be used in moderation.

It is far from being a good rule to think what we fancy always the most suitable. The palate is apt enough in general to be influenced by opinion concerning the wholesomeness or unwholesomeness of different things. In many complaints it becomes miserably depraved, as we see in the dirt-eaters of the

West-Indies, and in our own charcoal and chalk-eaters. I have never known a thirsty person wish for red herring; but I have known red herrings cure habitual thirst. The dyspeptic ought not then to rely upon the palate as an unerring guide. They may find the things most craved disagree in the most violent manner. They will often find the things they relish very little at first, agree best.

I have already stated the mischief sustained in early life, from unfrequent and insufficient meals. Examples of young people perishing from atrophy in consequence, have occurred to me. And within the last five weeks I have been consulted by a lady, who believes herself to have been the favourite of the heads of one of the most numerous seminaries in England, because she was the least eater, and who declared to me, upon being curious to observe the exact consumption of meat in the school, that she saw forty girls fed two successive days, upon a single leg of mutton. It was not that the allowance of food was professedly limited, but the calls of appetite were suppressed from shame. Thus the censure of superiors has often more effect than positive law, and it may be sometimes as cruel to employ ridicule as the rack.

Dyspeptics, full-grown and become their

own masters, commonly need restraint as to the quantity of food to be taken at one time. They will find in their feelings an infallible rule. As they should never fast till they feel faint, so they should never go on eating after the smallest sense of fullness or distension comes on. The CYRUS of XENOPHON professes to rise from table as alert as he sate down. Similar temperance may be recommended to the dyspeptic: and according to the old rhyme, they should refrain from exertion an hour after dinner. But, in truth, the wisest plan for this class of invalids is not to bind themselves to the times of eating of the people in health. They should take a little food often; as near going to bed as they can without inconvenience, and even in the night. Sleep should by no means be indulged just after eating, unless it be evidently refreshing and unattended by feverishness. It will be much better to walk slowly in the open air in fine weather. I say *slowly*, since Dr. HARWOOD's experiment, in which a dog, that was hunted immediately after feeding, had made scarce any progress in digesting his food, while his fellow, that remained at rest, had nearly compleated the operation, is rendered entirely applicable to our purpose by frequent experience in human

invalids. From such experience we learn, that moving a couple of hundred yards with a brisk pace, immediately after a full meal, will occasion an indigestion. Any effort of the mind will have the same bad consequence. At other times, that quantity of exercise, which renders the whole system most vigorous, is best calculated to prevent or remove the evil under consideration.

The objections formerly made to hot rooms, might be repeated now. They are just as pernicious to the stomach as the lungs. By weakening the skin in particular, and rendering it susceptible of chill from the contact of the external atmosphere during a great part of our year, they impair the digestive organs in proportion; and besides bringing on habitual debility, expose them to sudden fits of torpor from the influence of that degree of cold, which the natives of a climate like ours ought to be inured to bear without shrinking. There are persons now living, who when students at our Universities sate over their books up to the knees in baskets of straw. I have endeavoured to shew in the preceding Essay, that the difference between these students and their more comfortably lodged successors, turns out altogether in favour of the viscera of the chest.

We may believe, upon the faith of every analogy, that the same must hold with regard to the viscera of the belly.

Dr. C. L. Hoffman, the most eminent physician now in Germany, as far as professional eminence is determined by professional profits, gained great credit in the case of the first ecclesiastical elector of the empire, by advising him to suppress the tendency to eructation, when his electoral highness found himself distended with wind. Medical writers have published the same advice. It rests upon the idea of resisting the inverted motion of the fibres of the stomach, and upon the effect of pressure in stopping the extrication of gas. Thus if diluted acid be poured on calcareous spar, and the phial closed, the effervescence will cease before the acid is saturated; and it will go on again, if the condensed gas be set at liberty. Fermentation may be impeded in the same manner. I was unwilling to withhold from my reader so philosophical a method of easing the qualms of *stomachic pregnancy*, and preventing its recurrence, because its beneficial effect is strongly attested. But it is upon a more radical plan that I wish him to rest his hopes. Daily and repeated friction about the stomach, as well as on the sides and

back, has been frequently and justly recommended. It ought to be practised by every one subject to this species of complaint.

When the transactions at the Pneumatic Institution are given to the public, the effects of the red sulfate of iron in simple indigestion will be stated; and from the result of hundreds of cases, it will be seen how far this deserves the preference above all other preparations of iron, and above *tonics* in general. This medicine almost infallibly cures in the dose of a few drops. Smallness of dose is always a happy circumstance. In dyspeptic cases, when I formerly had recourse to those slight bitter infusions, for which I never have occasion now, the fear of being overwhelmed with the quantity was a frequent obstacle to success; and in other cases, where it is necessary to administer drugs with a somewhat bountiful hand, the same apprehension often stands in the way of recovery. The greater the knowledge of the world, and the stronger the habit of reflection, the more intractable is erroneous opinion upon this point. The desire of the apothecary to swell his bill, and the complaisance of the physician towards the apothecary are justly believed to create infinite abuse in our profession. Hence, on all

occasions, where medicines are not put into a small compass, alarm is indiscriminately taken lest this abuse should be carrying on ; or perhaps it is thought that sufficient attention is not paid to the delicate state of the invalid's stomach. People seldom give a physician credit for common sense, whatever they may think of his skill. But on their own crude and chance diaetetical notions they rely as if they had the certainty of instinct. *It is impossible*, cries the mother, *he should eat any thing, if he must take all that quantity of trash.* Her commiserating eloquence improves into nausea that inappetence, which a proper medicine would remove. Half a pint of bark decoction in the day is rejected as intolerable, when a pint of wine in two hours is nothing thought of ; and this merely because wine, though many times more violent in its operation and more palling to the appetite, happens not to be sold at the same shop with bark.

INDIGESTION with BAD SPIRITS.

Infants seldom utter more melancholy cries than when they are pinched with hunger. At all ages, a peevish, fretful or spleetic disposition is apt to come on, when the

stomach is out of order from whatever cause. The predominant feelings of the dyspeptic being therefore painful, their impressions and ideas, as they occur in succession, become associated, each in their turn, with these feelings. Things present become the objects of aversion or indifference; things absent of fear. The smallest undertaking is shrunk from as an Herculean labour; every mole-hill assumes the dimensions of a mountain.

Each individual, subject to indigestion, will also be subject enough to low spirits. But till both these affections recur with a certain frequency and violence, they are not held to constitute the disorder, denominated hypochondriasis, though there is no precise criterion by which to distinguish it. There can be little doubt but the sensitive part of the system is greatly altered. A patient of this class has confessed to me that the movement of a pen over rough furrowed writing paper has brought on a undescribable jarring, like a general tooth-edge, which seemed to pass to the bowels and proceed there with redoubled and excruciating violence. Another writes of himself—"I could not look at a large cypher, as a 6 or a 9 for example, without an internal shock; a shelf, on

“ which only three or four books were standing, threw me into a qualm, and I could not feel easy, till it was filled up.”—What confirms the supposition of a gradual alteration throughout the whole nervous system, is the observation that in rare cases, the disorder begins in the mind and afterwards involves the stomach, though originally strong and at no time exposed to any serious cause of injury. Doubtless also by their constitution some persons are more susceptible than others of the operation of these causes.

The hypochondriac sufferer always finds language fail him, when he gives vent to his complaints. After vain and unsatisfactory efforts, his conclusion generally is—“ *In short you see before you, the most miserable wretch upon the face of the earth.*” And in his secret thoughts and his confidential communications, he incessantly paces round the circle of his miseries, making only a brief pause at this heart-breaking summary.—He tells you he has heart-burn, dreadful flatulence, rising of a clear watery liquor in a morning. Then there are stretchings, tearings, and a heavy load in the region of the stomach under the short ribs, on both sides or only on one. They alternate with a dragging

down of the navel, with prickings, startings, and most distressing throbbings in the belly. These sometimes fly round to the back ; and the feeling, lately a cholic, now from its changed seat, creates an apprehension of stone in the kidneys. Irregularity in the body attends, but the costive state predominates. When otherwise, the evacuated matter often looks yeasty, like wort in full fermentation. After eating, the abdomen becomes distressingly tense. But the distress, referred to the chest, is a great deal more severe. Overpowering fits of anxiety and breathlessness supervene, palpitations arise, and in the midst of all, there is a painful cramped sensation which makes the patient feel as if the heart had its sides violently squeezed together. Pulsations in the neck and at the temples, difficulty of swallowing, ringing at the ears, giddiness on suddenly looking up, on turning round or stooping, are in the train of the hypochondriac's torments. A circumscribed spot in the head shall be as cold as if ice was melting on it ;—another will burn like a live coal ; and there is often a rending within, as if the head was about to burst. The signs of derangement in the sensitive power are in fact innumerable.

The intellect itself is subject to fits of intermission. There is a frequent incapability of mustering the ideas, or of finding words for the thoughts. The memory, at such moments, is extinguished ; the fountains of the imagination are dried up, and on a hundred little occasions in life, which demand an expedient or present a choice of difficulties, invention and judgment are both totally at fault. “ The head is a desert,” as one who speaks from experience, expresses it.

A great hypochondriac once confessed to me that, one summer’s evening, being desirous to breathe the fresh air, he waited till dusk that he might sally forth unseen ; but scarce had he walked five paces from his door, when he saw his own servant moving towards him. He instantly turned about with all the anguish of guilt, and stole back into his apartment. He could not bear to meet any human countenance ! Another, a very religious patient, relates of himself that at a time when he was apprehensive lest he should be unable to refrain from laying violent hands on himself, an old woman accidentally mentioned one, who had committed suicide on Good Friday. “ Scarce had I heard the story, when I was seized with violent terror, lest I should come to the same end.

“ on the same day.—I could not behold a
 “ knife without shuddering. At dinner,
 “ I grasped it with all my might, lest I should
 “ suddenly turn it against myself; and when I
 “ had cut my meat, I fed myself with my
 “ fingers. From an impulse that arose more
 “ suddenly than the passage of an arrow,
 “ I set to my throat, in idea, the pen I was
 “ holding, the knife with which I mended it,
 “ the tobacco-pipe in my mouth, the snuf-
 “ fers, my sword, the church-steeple opposite
 “ me. Between sleep and awake, methought
 “ the room was full of knives, and I fancied
 “ that I heard the noise of their whetting.”

The same person says “ he had locks put to
 “ his sashes, lest he should jump out at the
 “ window by night.”

Deplorable as his day may be, it is the night
 the hypochondriac dreads. The night is his
 season of peculiar agony, and its horrors are
 often deeply imprinted on his morning coun-
 tenance. His sleep is so short and so broken
 that he seems to himself not to have had a
 wink, though, on taking pains to ascertain
 the fact by a repeating watch, the veteran
 naturalist DAUBENTON found that under
 similar circumstances he had slept a good
 deal. But refreshment, the ordinary and
 proper evidence of sleep, he feels none.

After having committed the smallest sin against his stomach, he will struggle for a time with frightful dreams, and awake suddenly with a stifled scream. Then the greatest possible quantity of horror is accumulated upon every object that passes before his mind in review. The merchant fancies his ships all wrecks, and his debtors all bankrupts. The most pious communicant accuses himself of having partaken of the Lord's supper unworthily. The physician cannot believe but he has poisoned his most interesting patient by a slip of the pen, and, in every noise of the night, he hears a summons to the consequences of his oversight. The imagination mixes up ruin and guilt in the largest dose, which can be administered to existing circumstances. Every brother in affliction is ready to cry out with the Ayrshire poet—" *Miserable perdu!*
" *that I am—here I lie, a monument of the*
" *vengeance laid up in store for the wicked,*
" *slowly counting every stroke of the clock, as*
" *it slowly—slowly numbers over these lazy*
" *scoundrels of hours, who, damn them, are*
" *ranked up before me, every one at his neigh-*
" *bour's backside, and every one with a portion*
" *of anguish on his back to pour on my devoted*
" *head—and there is none to pity me.*"*

* To the horrors of this disease none can do justice but

Among hypochondriacs, I look upon the *reformed rake* as one of the most remarkable

a great poet—himself a sufferer. The faint outlines and cold colouring of medical artists may serve another purpose, but scarce that of morality or health—I mean of the preservation of health. Abroad it seems much more the custom than with us, to let the public into the secret of mental sufferings. This was the case long before Rousseau, and seems not to have arisen in imitation of St. Austin. But of various confessions and histories of single valetudinarians, the greater number belong to *melancholy*; and of the rest, from which I have selected a few traits, however the authors may have laboured under the pangs of genuine *hypochondriasis*, they seldom possess the poet's power over the signs that express and awaken feeling.

A few loose touches of the master may perhaps work more upon kindred spirits than an elaborate design. If so, the letters, written by Burns in the latter period of his life, are still more worthy the attention of men of genius than his best poetical pieces. “His feelings at times could only be
“envied by a reprobate spirit, listening to the sentence
“that dooms it to perdition.” After exhausting in reflection every topic of consolation, he compares himself “to
“Judas Iscariot, preaching the Gospel.—He might melt
“and mould the hearts of all around him, but his own
“kept its native incorrigibility.” “His spirits are fled!
“fled!” and he “has tried every thing that used to amuse
“him but in vain.” One cannot help wishing that Burns's father could have anticipated this extremity of hypochondriacal wretchedness; and when the heart of the future poet had been warm with the exercises of devotion, so feelingly described in the *Cotter's Saturday Night*, that he could have impressed upon it sentiments, that might have operated as

varieties. There is reason to think that ladies, and sometimes the best of the sex, are seized with the ambition to reform rakes, and that rakes, professing to be reformed, find especial favor in their sight. It was in part to expose the hazard of so tempting an enterprize, that RICHARDSON wrote his immortal *Clarissa*. It would be hard if many women had not profited by Richardson's admonitions; and for others it would be happy if they could be persuaded, that such reformation by no means implies the kind of merit, which is entitled to the high reward, so often sought under that plea.—I except one case only; and that is, where the pursuit of gross pleasure is abandoned, while the bodily

a preservative against intemperance. In this case, the son would not have added another name to the list of men of the highest talents, whom our age has seen sinking, destitute and despairing, into an early grave. To raise the feelings is an art, without which young people cannot be brought up to good. But it is farther necessary to connect these feelings with *determinate* ideas. This implies appropriate knowledge on the part of the institutor, and a well-timed application of that knowledge. On no other terms, can the warm wish of BURNS in behalf of the peasantry of Scotia, ever be fulfilled with regard to any class or country—

Long may thy hardy sons of rustic toil

Be blest with HEALTH and peace and SWEET CONTENT!

organs retain their freshness, the appetites their ardour, the imagination its radiant hues, and the nerves their first exquisite faculty of thrilling with delight through all their filaments. But if the horse is content to stretch himself along a spot of the pasture, over which he used to bound when a colt and to find it too narrow for his spirit and powers, let us examine whether he is tame, only because his limbs are foundered, before we commend the change in his disposition.

It can hardly be conceived that debauchery, when it is followed by disrelish, by dejection, and impotence of stomach, should not produce peevishness also. This is not only the case, but the expression of peevishness must on several accounts be most bitter towards the persons, with whom the sufferer is most familiar. Upon them, every eruption of ill humour is discharged, and their most kindly intended offices will often provoke the eruption. Should they entertain the senseless vulgar notion, *that hypochondriasis is not a real, but an imaginary disease*, they will infallibly aggravate it, and draw down upon themselves all the consequences of the aggravation.

Few that have the misfortune to be domes-

ticated with an hypochondriac, but must live in constant fearful expectation. The mine is laid under their feet, and every step it may be sprung. The sudden sallies of impatience appear, on reflection, unaccountable even to him, from whom they oftenest burst. Thus, I find it recorded in the journal of an hypochondriac—"This day, a friend offered me
"a liquor to allay that uneasiness of the
"stomach, which I, so often find the occasion of my dreadful humours. Unluckily,
"that very instant, the idea crossed me—
" *that it might be poison!* - - - The sudden
"origin of my fretfulness I am unable to
"explain - - - I often shew a forced coldness
"towards the most obliging overtures of
"those about me, and make them no other
"return than rudeness."

There is another thing which her guardian sylph should whisper into the ear of every woman—that she may pause before she unites her fate to that of a man, who may have abandoned a rakish course, because he has reduced himself to a state, in which his old gratifications are stale or impossible. Whatever signs of gloom or fretfulness may break out, they are infinitely less than the reality; and whatever the reality may previously be, the fits will grow stronger and more frequent

after marriage. He, who has been but whimsical to remoter relations, will become bitter towards a wife. "After every conjugal endearment," says the penitent just quoted, "I become horridly peevish. I fancy every body has a wish to murder me. I dread being turned out of my office, and dying for want. My fellow men, towards whom, at other times, I feel so much kindness, then become intolerable to me. I go out of my way to avoid my most intimate friends. I look upon my poor wife in a much worse light than she deserves - - - Oh! had I never ascended the marriage-bed, and above all, had I repressed the early sallies of a voluptuous imagination, I had probably been among the healthiest persons upon earth, whereas now I feel as if every day would be my last."

The physician to a hypochondriac would be nearly as ill off as the wife, if the connection were equally indissoluble. Patients of this description, as long as they can endure society, wind themselves up by voluntary efforts and by the incentives to merriment, for a few convivial hours, to sink the deeper into despondency when alone or in the bosom of their family. In like manner, on hearing the name of a new physician, they muster up what hope they can, and repair to him in

expectation of sudden deliverance from their calamities. But in this they must be disappointed. The idea of the physician and his advice present themselves again and again in some unlucky moments of painful sensation. They are not long before they share the common lot of every object that occurs to thought and sense. Though lately sought with ardour, they are soon regarded with indifference, and at last, with aversion. Nor can any thing but some fresh name light up a short gleam of hope in the mind. Hence we see hypochondriacs running from one medical counsellor to another, till perpetual disappointment and progressive loss of spirits end in universal distrust of others, and compleat despair as to themselves.

SEVERE STUDY.

In accounting for the injury which we so frequently see done to the sensitive and digestive organs, much is imputed to intensity of voluntary application. There is, undoubtedly, a degree of mental contention, incompatible with florid health; and in every generation of men, perhaps a dozen individuals may justly impute the ruin of their constitution to this cause. But it is of very limited operation; and by tracing back the history

of the pale, tremulous, unnerved and dyspeptic student, we shall commonly arrive at a period of his life, when his devotions were openly or secretly addressed to divinities of a very different stamp from Minerva and the Muses. Accordingly it is observed by the modern editor of Ramazzini's work on the diseases proper to different vocations, that "the man of letters, who, in the season
" of manhood, is plagued by hypochondriasis,
" must either have been brought up in an
" effeminate manner, or have laid the foundation of his malady during his residence
" at seminaries of education. We therefore
" find this complaint far more frequently
" among such literary people as have been debauched in their youth, than among those
" who have been placed in circumstances,
" where this source of mischief could not
" reach them. The same remark is applicable to artisans whose occupations are
" sedentary. Their mode of life may dispose
" them to hypochondriasis; but the disease
" seldom forms, unless they have enfeebled
" themselves during their youthful years by
" some kind of excess. The labour of the
" mind is very seldom sufficient of itself to
" create hypochondriasis, but in a debilitated system, it easily becomes the occa-

“ sional cause of that disorder; the weak-
 “ ened nerves being thrown into a state of
 “ irritation and exhaustion by any unusual
 “ exertion of the intellect.”

There is another common species of excess besides too free indulgence in spirituous liquors, which has, unquestionably, a great share in producing the miseries of hypochondriasis. But as far as it is possible, consistently with an upright and impartial investigation of the practices, by which the weakly periods of childhood and old age are brought almost to touch each other without any intermediate season of vigour and enjoyment, I would avoid scandalizing the over-delicate* among my readers. I content my-

* I call those *over-delicate*, who would sooner commit a great than a small crime—sooner break a rule of morality than of decorum—I call Lady Macbeth *over-delicate* when she urges her husband to commit a murder merely to save an oath——

———— I have given suck, and know
 How tender 'tis to love the babe that milks me:
 I would, while it was smiling in my face,
 Have plucked my nipple from its boneless gums,
 And dash'd the brains out, had I so sworn, as you
 Have done, to this ———

I call the archbishop of Novogorod *over-delicate*, who thought assassination less odious to heaven than three Lutheran churches. I call those *over-delicate*, who rather than that mention of certain things should arise, would risk

self therefore with referring back to the fourth Essay, and with adding that those who would not be haunted themselves, and who wish to save others from being haunted, by the foulest fiends from the cave of Spleen, must be attentive to the doctrines, inculcated in the longest section of that essay.

MERCHANTS' CLERKS.

By information from London, Liverpool, Birmingham, and other mercantile and manufacturing places, I learn that a custom has been lately introduced, and is now becoming general, which must add greatly to the ravages of all chronic diseases among the stronger sex. It seems the next thing to reviving the practice of that ancient people, whose heart commerce hardened, till they came to sacrifice their offspring to *Moloch*. Boys are now frequently placed out to business at a very tender age. This is done with a view to advance their fortune; and in that view, no doubt, the measure is judicious. But in respect to health it is so pernicious, that

the danger of their inexperienced children debauching themselves to death. Those I repute truly delicate, who are studious of decorum, except when some duty calls upon them to violate it.

were it possible to gain the unprejudiced ear of any man of common sense and humanity, he must immediately reject, with horror, the proposed advantage, as being, in many instances, the price of blood, and at best, as the purchase of that well-being, which is above all price.

I am indebted, for the following observations, to a merchant, whose eyes were opened to this custom by its consequences—not by the hypothesis of any medical speculatist. It is not surely too much to hope that his testimony may open the eyes of others.

“ In compliance with your request, I do
“ not scruple to repeat what I dropped in
“ conversation. Two fatal cases have oc-
“ curred in my own counting-house in the
“ course of a very short period. I do not
“ doubt but many other counting houses
“ could afford you others equally melan-
“ choly, if the principals, by swelling the
“ list of the unfortunate victims of avarice,
“ were not unwilling to record, at the same
“ time, their own neglect and severity. I
“ am persuaded that most of the diseases
“ incidental to the sons of commerce may
“ be attributed in a great degree to the fol-
“ lowing causes, *viz.*

“ 1st. To the want of proper conveniences

“ for writing—the tall and short being generally employed at the same desk.

“ 2nd. To a sufficient time not being allowed after the meals, so that digestion is retarded or impeded by leaning over the desk with a full stomach.

“ 3rd. To a necessary change of occupation not being attended to, particularly in favour of young and weakly persons, and

“ 4th. To the frequent long sittings in the same attitude.

“ I have also observed that it is now-a-days much the custom with parents to endeavour to exonerate themselves as soon as possible from the cares, which the health and education of their children demand, by placing them too early in commercial monasteries; alledging as an excuse that young men cannot too soon contract habits of industry, and a taste for business. Too frequently, however, these prudent parents are only actuated by a wish either to put their children in the way of gaining their own livelihood soon, or to remove them from home as troublesome impediments to their own gay and fashionable mode of life. Such an unnatural practice is attended with the most injurious consequences, not only with regard to their health by

“ confinement in dungeons of counting
“ houses, at the period of the developement
“ of their bodily and mental faculties, but
“ also with regard to their minds, which
“ become so contracted by the early habit of
“ viewing every thing through one medium,
“ that there is no room left for more
“ generous sentiments and liberal ideas.
“ Another fatal consequence attending the
“ premature seclusion of young men in
“ counting houses, is, that they are rendered
“ too soon independent of their parents, to
“ whom they cease to pay due respect—filial
“ affection being then superseded by the love
“ of getting money.

“ It cannot be too strongly recommended
“ to those who are entering on the vocation
“ of trade, to endeavour as much as possible
“ to write in an erect posture, and on desks
“ sufficiently high to reach above the pit of
“ the stomach. Foot-stools may be easily
“ procured if the desk should be too high,
“ and if too low, a light moveable desk may
“ be placed upon it. They should also obtain
“ at least a full hour’s respite after every
“ meal, and never remain too long in the
“ same attitude without taking some positive
“ exercise. I knew a stout, athletic man
“ who by long confinement to writing on a

“ low desk became extremely thin, was
“ troubled with pains in the side, and found
“ his health gradually declining, until he
“ procured a higher desk and wrote standing,
“ when he very soon felt the benefit of the
“ change in the return of his former health
“ and vigour. My own stomach was once
“ so debilitated by the toils of the desk, that
“ it frequently refused to perform its func-
“ tions, and soon after dinner regularly re-
“ jected the food nearly in the state it
“ was when swallowed. I had recourse to
“ travelling, and recovered in a great degree
“ after a long absence; but even now the
“ organs of digestion have not completely
“ regained their proper tone; for I am ex-
“ tremely subject to indigestions, and to
“ that disagreeable sensation, vulgarly called
“ the heart-burn. I. L. M.”

HYSTERIA.

Many discerning medical writers have confessed their inability to lay down any marks, by which hysterics in women can be distinguished from hypochondriasis in men. To enter into this question does not belong to the plan of the present work. Hysterical

women, it is certain, are liable to be discomposed by causes equally trivial with hypochondriacal men. The slightest moral or physical impulse gives a shock, which is felt with equal violence throughout the system. There is therefore the same inability to cope with the common incidents of life; and there is the same soreness of feeling. Nor will an hysterical person be easily found, who is not subject to flatulence, acidity, oppression, and all the other evils consequent upon feebleness of stomach. Many hypochondriacs too, it may be observed, find nothing so troublesome as a difficulty of swallowing, a choaking and rising in the throat, like the hysterical ball.

For the evils of indigestion and the common propensity to hysteria, women are indebted to their wretched education, and the life they afterwards lead; to the neglect of that exercise, which the human animal was formed for taking; to close confinement in unwholesome apartments; to books that have too great power to melt; and to other habits and privations, already described at large.

The quantity of wine, small as it may appear, which many women allow themselves, deserves separate mention; as it is probably not without its influence in rendering them

dyspeptic and low-spirited. If it be, in any case, true, that the effect of intoxicating fluids is not to be estimated by measure only, but also by the state of the person who takes it, it must be true in regard to inactive, delicate and nervous females. In them, the digestive organs may be as much injured by a glass (suppose two ounces) of wine, as in a robust man by a pint. I have repeatedly known the head, in such females, to be most disagreeably affected by a small glass of port-wine and water. The operation of the mixture has been compleatly *narcotic*, as much so as that of opium or digitalis ever is; not the slightest exhilaration having preceded the sense of heaviness and stupefaction.—The parties thus affected, have always found themselves better under a course of total abstinence from vinous liquors.

Women in genteel life must be particularly subject to the secondary bad effect of wine. In scarce any instance, perhaps, are the gastric fluids sufficient to prevent the acetous fermentation, to which wine is subject; there is a concomitant change of the whole vegetable portion of the food into a similar sour mass with the extrication of an immense quantity of air. Though taking one, two, three or four glasses of wine at

dinner, cannot be considered as intemperance, because that term, as applied to liquids, generally relates to their inebriating operation, yet the smallest portion of fermented drink may be productive of other inconveniences of the most serious nature. And no female of the class in question, who has to complain of want of power in the stomach, should be content till she has utterly discarded such articles of diet. They may be gradually discarded; and spices may be taken in place of the portion omitted. There is reason to suppose that spices, used as freely as by the inhabitants of hot countries, would be far less injurious than our usual wines, if indeed injurious at all.

*PREVENTIVE REGIMEN, with some
Observations on injurious means of tem-
porary relief.*

The most compleat general security consists in such a system of living as is best calculated, according to the principles already laid down, to maintain the digestive powers in full vigour. A strong stomach is an infallible amulet against blue devils. They do not easily enter into a body so fortified, or if by chance they should, they are without diffi-

culty expelled. For there are accidental and temporary cases of hypochondriasis, of which the practitioner of medicine should never lose sight, and with which it may be useful to acquaint the general reader, because they demonstrate with peculiar force, how essential a healthy stomach is to good and even spirits. A physician on the continent relates that at one and the same time, a very considerable number of students from Lower Saxony and Westphalia came under his care in an university of Upper Saxony. They were dreadfully plagued with flatulence, and laboured indeed under every symptom of confirmed hypochondriasis. The most active medicines were prescribed, and a scrupulous diet not only enjoined, but faithfully observed. Yet the situation of the patients grew more deplorable every day. Relief did not take in a single instance; but, on the contrary, heavier complaints were continually made. In this state of things, accident led to a plan of treatment, which, says the reporter, “was followed by a happier result than all my medicines. One of my patients received from home a supply of suet and pumpernickel. These customary articles of food tempted him prodigiously. But he durst not touch them from an idea that they would double his sufferings, since

“ the lightest diet agreed so ill. I was obliged
“ to use much reasoning before he could be
“ persuaded to a cautious trial of the very dish
“ he longed for. However no sooner had he
“ indulged his inclination than all his distress
“ vanished at once, and he recovered the
“ firmest health. The rest followed the ex-
“ ample of their countryman with equal
“ success. They had every one been habi-
“ tuated to this coarse fare from their youth
“ up.”—Perhaps the woman with a perforated
stomach digested cucumbers quickly from
habit.

When uneasy feelings have associated themselves with indigestion, one may frequently perceive a principle of action, similar to that, which so forcibly actuates the sailor on being discharged from his floating prison. The hypochondriac, with a well-covered table before him, is apt to make himself amends for his uncomfortable morning. So he fixes, with desperate eagerness, upon the delicacies of each course, and afterwards crams himself with fruit like a hungry school-boy, who has just carried off the spoils of an orchard. This is a very natural sort of imprudence; and it is impossible not to pity those, who have such an excuse for suffering themselves to be seduced into it. I know not how they will find means to curb the

palate, but by considering into what an irritating, foul, oppressive mass, these delicacies will presently be converted, and forming to themselves a lively image of the consequences, as suggested in the preceding part of this essay. To oppose reflection to sensation is the only effectual resource in this, and in many other cases of temptation.--And can any other argument be thought necessary to evince the universal propriety of physiological information? What is reasoning, but to trace the order and relation of events? and how is it possible for any one to be rational with regard to himself, if he be not made sensible of the precise result of a given line of conduct? Without this, how shall any one avoid throwing himself into situations of extreme misery with as little consciousness of his danger, as is shewn by the calf, when the butcher is carting him to the slaughter-house?

When the inconveniences of intemperance begin to be felt, it is common enough to attempt to relieve the stomach by emetics, and still more so by quack preparations of different denomination—Emetics cannot be often used without a degree of mechanical injury, though so violent a case as that of the Dutch admiral Van Wassenaer may be

extremely rare.* But without laceration or excessive distension, substances which excite an enfeebled stomach into preternatural action, cannot fail to be destructive to its fine organization. I have never seen debauchery make so quick work with the constitution, as when the debauchee was in the habit of taking analeptic pills and similar compositions. I have noticed this in the most robust habits; and I will venture to say that there is no day in the season, when various wretched examples of the truth of the remark, could not be met with in the pump room at Bath.

There is no error more common or more mischievous among dyspeptic, hypochondriacal and hysterical invalids than to suppose themselves *bilious*. *The bile! the bile!* is the general watch-word among them; and

* Whenever Admiral Van Wassenaer gorged himself too full, he was accustomed to drink tea of the *carduus benedictus*, and then irritate his throat with a finger. Once upon having recourse to this method of relief, he felt as if something in his body gave way.—The most dreadful pain and oppression immediately followed. The physicians were equally at a loss to comprehend the cause of his distress, or to alleviate it in any degree. The patient expired in the greatest torture. On dissection, the superior orifice of the stomach was found to be torn off.

they think they can never sufficiently work it off with aloes, magnesia, or salts. I once heard the maid of a lady, whom a brisk course of this kind, determined by the dread of bile, had brought very near to death's door, observe that "*it was no wonder—for her mistress was never easy, but when she was on the chaise percée!*"

Many women are subject to returns of sickness. They first eject sour or glairy matter. After much retching, a little bile is squeezed up. This only shews that, like the rest of the world, they have a liver, and that this liver secretes bile, as it ought to do; though, not improbably, it secretes too little. But sometimes, even without this *ocular proof*, the idea of an excess of bile arises merely from those uneasy feelings in the abdomen that accompany indigestion; from a foul taste and furred tongue on awaking; and from that sallowness of the skin, which is usual in various kinds of chronic weakness. But none of these circumstances afford evidence of an overflow of bile. The uneasy feelings and the foul taste are owing to the general bad condition of all the organs of digestion from the mouth to the farther extremity of the alimentary canal. More stress seems to be laid upon the yellow hue

of the complexion. But an unhealthy state of the cutaneous glands is alone sufficient to produce this appearance. The bile may have no share in it. When this fluid is diffused over the surface of the body and through the blood, that is, when the jaundice is actually present, the white of the eye will also be tinged; the urine will dye rags yellow, and the stools will either be light coloured or deeply stained with bile. Without such symptoms there never can be reason for suspecting an habitual excess of secretion in the liver. It is true that the liver, in common with the other viscera, will be subject to irregularities of action. In general, it will furnish a scanty portion of imperfect bile; and at times, when irritated by imprudencies in respect to diet, by exposure to cold, or from sympathy with the nervous head-ache, it will run into the opposite extreme. But this disposition will only be aggravated by the frequent employment of purgatives with a view to remedy the evils of an inactive life and an improper regimen.

The dietetic rules for the class of invalids under consideration are precisely the same as for the dyspeptic. But in all stages of the complaint, moderation in quantity and abstinence from acescent and intoxicating sub-

stances are the chief means for obtaining temporary respite and eventual deliverance.

“Regimen,” says an old physician, once sufferer enough from hypochondriasis to write his own epitaph, under the persuasion it would soon be wanted, “is the most important part of the treatment. By diet alone is it possible to alleviate the extremity of distress, and to hinder the disease from getting compleatly the upper hand. Without attention to diet, it is quite in vain to hope that any patient can be rescued from it. To employ the best remedies, while regimen is neglected, is to build up on one side and pull down on the other. When the patient is brought into the most promising state of convalescence, the whole advantage will be destroyed by a SINGLE CONSIDERABLE ERROR IN DIET; and the treatment will be to be begun anew.”—

(*Dr. J. C. Tode Unterricht für hypochondristen. Copenhagen, 1797.*) Accurate observation will shew that ease and health are strictly attached to this seemingly hard condition. A bowl of water-gruel, a plate of fruit, will put the invalid ten degrees backwards; half a pint of strong wine twenty.

“The hypochondriac,” says Dr. Tode, “should make no meal without flesh, be it

“ roast or boiled, salted or smoaked. Animal
“ food, as the great antagonist of acidity, is
“ and must remain the soul of his diet. In
“ this complaint, the great secret consists in
“ guarding against acidity, and in recruiting
“ weakness. Both purposes are answered by
“ animal diet.” The pernicious change which
bread and vegetables are sure to undergo,
should be prevented, as formerly recom-
mended, by such a quantity of carbonated
alkali, as on experience shall be found ade-
quate to the effect. The time of eating is
not indifferent. I do not merely mean that
hypochondriacs should feed at short intervals,
but that they should never dine late. Healthy
animals may digest best in their sleep; but
unhealthy men only become feverish, and
are exhausted by sleep after meals. Our late
dinners therefore must be very mischievous
to hypochondriacs. It is probable too that
this and many other classes of invalids in-
dulge too much in sleep. It may be advise-
able to try to reduce the allowance to five or
six hours. Several hours may be spent, at
the same time, in reclining on a sofa awake.

It is obvious then that if the physician
does not enjoin a proper regimen, or if the
patient secretly deviates from the physician's
injunctions that nothing will be effected by

medicine. Most hypochondriacs are men who have led irregular lives. Their unhappy habits are too apt to overpower the strongest resolutions, of which an enfeebled mind is capable. This is precisely the greatest difficulty in the way of a cure. Otherwise the greatest benefit is to be expected from drugs. They will strengthen the stomach, and in consequence improve the spirits. It may not always be in the power of the practitioner to restrain himself to one article of the *materia medica*. But the same red sulfate of iron, which I have recommended for indigestion, will generally prove sufficient, where hypochondriasis is not complicated with enlargement of the heart, or with some other irreparable organic injury. When it is, it will procure many hours of tranquillity. A few drops of this preparation put an end to that terrible inward struggle between the disposition to suicide and the counteracting motives, which some hypochondriacs avow, and all perhaps experience—

*Hic motus animorum atque hæc certamina tanta
Pulveris exigui jactu conposita quiescunt.*

Few phænomena belonging to human nature are more wonderful. The very same are pro-

duced by the same power in persons afflicted with hysteria.

It is unnecessary to say that the hypochondriac must be particularly careful to keep the region of the stomach and the extremities warm with cloathing and exercise.

In treating of a disorder, which so deeply affects the mind, much may be expected concerning moral remedies. The expectation is perfectly reasonable. But what I have to say on this head, I shall refer to the following essay, in which various nervous complaints, or deviations from a sound state of feeling and intellect, will be considered. I shall only here caution the friends of hypochondriacs against improper management of the mind. Indeed, the doctrines laid down by the most judicious writers on education are in great measure applicable here.

Every thing sour and severe, all general maxims and sage apophthegms, should be avoided. As young people cannot be lectured into good conduct, so neither can hypochondriacs into cheerfulness. Ridicule, reproach, and advice, will only tend to ulcerate a heart, already inflamed. Exhortation ought to be very sparingly employed. The most cogent arguments will avail nothing. This is what provokes the friends of the invalid;

this it is that drives *them* to provoke *him*. They cannot bear that motives, in *their* apprehension so irresistible, should have no influence upon *his* resolutions. But the very suitableness of a set of considerations to their inclination and judgment, is the reason why they should not expect it to suit his. His mind has undergone an alteration in form and quality; and therefore every thing must act upon it differently from what it does upon minds, more soundly constituted. No one takes it amiss that a person in a burning fever does not feel disposed to make a hearty meal on roast beef, yet this would be altogether as rational and humane. Indeed in barbarous ages, and among the vulgar of all times, diversity of palate is a serious ground of ill-will. There is however now a large portion of society, cultivated enough to be tolerant in meats and drinks. When the range of human nature in regard to ideas and sensations is more generally understood, the same toleration will be extended. The sick in mind will give no more offence, and incur no more censure, from the inevitable symptoms of their malady, than the Greenlanders for ranking train-oil as a delicacy, or certain Asiatics from admiring *asa foetida* as a perfume. Let the friends of

hypochondriacs therefore not suffer themselves to be scandalized at their caprices and imbecility. Let them not dream that any remonstrances of theirs can excite an effort of the will strong enough to throw off the disease. Let them not presume too much upon their own skill in the great art of regulating the ideas and affections of others, unless they can bear themselves witness that they have studied it with as much assiduity as any other art or science requires. The spells commonly used for exorcising those dreadful tormentors, the blue devils, put them but more securely possession of their man. It is given to few to pour oil into the wounds of the mind; to allure the harrassed thoughts into the shady groves and pleasant fields of imagination; to instil inclinations, which shall scorn the spontaneous suggestion of him, by whom they are adopted; to set about the thing they would have another do, in such a manner, as by help of the principle of involuntary imitation, to ensure what awkward managers strive in vain to accomplish by tedious entreaty and harrassing solicitation. These, and such as these, however, are the only arts, by which those about an hypochondriac can contribute to his recovery. To repel his communications when he

desires to unburthen his soul of its griefs; to treat every new complaint as ideal, and to tell him that he is well enough if he would but think himself so, is to take the most likely way of rendering recovery hopeless. Nor does it shew want of understanding less than of feeling, because, from the state of his organs of thought, he cannot think of himself but as he does.

LIVER COMPLAINTS.

If the size of an organ be a criterion of its importance, the liver will be entitled to rank high, it being the largest gland in the human frame. The intelligence concerning the incidents of life, that passes daily from mouth to mouth, sufficiently bespeaks its importance in a medical view. Nothing is more common than to hear deaths announced in consequence of an unsound liver. After the years of childhood, I know not if greater mortality arises from any other cause among the higher classes, except only from an unsound state of the lungs. Nothing more compleatly destroys the faculty of pleasurable enjoyment, or provides a larger space for all the modes and degrees of misery, that

can stand in the interval between untainted health, and the last expiring agony.

The inhabitants of warm climates are known to be extremely subject to complaints of the liver. Violent external heat has the power of stimulating that organ to excessive secretion, as is proved to demonstration by the abundance of bile in the matters evacuated from the stomach and bowels both upwards and downwards; and also by the truly jaundiced appearance of the skin and eyes, and the power of the urine to give a yellow dye. These undoubted facts have given rise to much groundless apprehension, and have contributed to bring the bile into greater disrepute than any fluid, furnished by the secretory apparatus of the body. For general languor, nausea, foulness of the tongue, want of appetite and indigestion, *accompany* or *follow* the excessive action of the liver, and therefore even by medical writers these complaints are said to be *produced* by too large a quantity of bile in the first passages. This opinion having been spread by the publications and conversation of physicians, those who feel languor, squeamishness and all the other symptoms, only not those of real jaundice, ascribe them without scruple to bile upon the stomach, and, as I have already

remarked, continue without mercy to scour the intestinal canal, till they reduce it to an almost total incapability of performing its functions. It is probable that the smallest portion of these effects is owing to the bile. The violent stimulation of so considerable an organ as the liver is alone sufficient to produce the full measure of debility. The same cause, which excites the liver, is very capable of occasioning nausea, and of disposing the stomach to reject its contents. It is not to be supposed that any of the parts concerned in digestion can be strongly affected while the rest continue in a healthy state: and, without the lodgement of bile in the stomach, sickness will arise from a disease of any neighbouring organ, as from inflammation of a tract of the intestines, and from the irritation of the kidney by calculous matter. Indeed, the symptoms mentioned above will all, except yellowness of the eye, be felt, where the bile is deficient or imperfect: moreover, inspissated bile is a favourite remedy for a bad stomach in many countries, and may be taken largely without sickness. After the heats of our own summer, slighter causes will bring on a violent and often dangerous increase of the function, proper to the liver, with vomiting of bile. Under

these circumstances; the instant before a portion of bile is about to be discharged from the stomach, as far as can be judged from the feelings, a little ice or cold water will stop the retching, and by repetition at proper intervals, cure the whole complaint, without the discharge of another atom of bile. Whence it would seem that the presence of bile is not the essential, or not the only condition: and that the stomach, on such occasions, must be at least as much disposed to be offended, as the rank and unhealthy bile is capable of offending it.

I was informed by an officer from the spot, that nearly all the men belonging to a regiment of horse in India, died within a short space of time of a liver complaint, because the commanding officer would persevere in exercising them in the face of the sun. Were evidence to the point wanting, nothing could more clearly shew the effect of excessive heat on the European constitution. Whether the natives of hot climates often suffer in the same manner without the assistance of intemperance is doubtful. We can hardly suppose so large a body of men as a whole regiment to have been intemperate; and we know that our countrymen in the East and West Indies, without transgressing the bounds of

moderation, as those bounds are usually traced, sometimes carry home a liver completely disorganized. It is most likely, however, that by observing the abstemiousness, necessary to some constitutions in the torrid Zone, they would escape.*

For it is still the same abuse of inebriating liquors that falls as heavy on this great appendage to the stomach, as we have seen it falling upon the stomach itself. The classes that take inebriating liquors strongest, and in largest quantity, other circumstances being equal, are most subject to complaints of the liver: the accidental antidotes in some taint of the constitution, or in the mode of life, are precisely the same in both cases; and the exceptions are equally seductive, in the way of example—from the propensity of mankind to draw rules, agreeable to their inclination, from single instances, how-

* It may be imagined what havoc heat and vinous stimulants, united, must produce. The facts completely answer expectation. I lately saw the last days of a West Indian, who died with jaundice, and at the same time, with excessive evacuation of bile both upwards and downwards. I was informed that he had belonged to a large club of *bon vivants* in the islands of slavery and pestilence; of whom the greater part had perished from complaints of the liver, at an early period of life.

ever out of the common course of things those single instances may be.

It would be desirable if any particular feelings or appearances could be pointed out as certainly indicating when the liver begins to be in danger. But in this country, the change as depending upon a particular course of life, is usually very slow. In the most sensible organs, slow changes will take place without pain or alarming disturbance of the functions; and the liver has very little sensibility.

By persons, in any degree debauched, and indeed by the drinkers of fermented liquors in general, the faintest standing signs of indigestion may serve to indicate that there is something amiss with the liver. Organs, so intimately connected, must be expected to sustain damage in common. The liver has sometimes been found indurated after death, without any symptom but that of indigestion.

Luckily, however, in most cases, peculiar signs do shew themselves before it is too late to avert the most terrible part of the consequences, though seldom early enough to enable the physician fully to effect that renovation upon the aged in constitution, which Medea is fabled to have accomplished

upon the advanced in years. A sense of heaviness in the upper part of the belly, an obtuse pain below the ribs on the right side, with flatulence or acidity in the first passages, are just grounds of apprehension. When a person, upon whom the ordinary causes of hepatic complaint have operated, is sensible of any of these symptoms, and cannot lie with ease on the left side, no time ought to be lost in reforming the diet. On closely questioning invalids with palpable disorganization of the liver, you sometimes find that they can recollect the period, since which they always found themselves upon the right side on awaking, though that was not the case at a period still more remote. Faint inward sensations, raised probably into greater distinctness by sleep, occasion this position to be regularly taken. Just as similar sensations of a nature, not yet ascertained, seem to occasion the general preference of the right hand, though contrary sensations, in some individuals, are so much less faint as decide in favor of the left. Let not, however, any one pronounce himself sound because this propensity is absent. Equal facility of lying on either side and in any posture, is no proof of the good condition of the liver. Sallowiness of the skin, and particu-

larly a light yellow colour of the forehead, accompany disorganization of the liver. A morning cough followed by ejection of a little froth from the mouth, or what is vulgarly called *spitting six-pences*, is another strong indication. The same is to be observed of pain in the right shoulder-blade. Lastly, the liver can be occasionally felt hard or enlarged. Then there can be no doubt. But I hope few of my readers will be so philosophical as to suspend their belief till the touch furnishes this degree of evidence.

Nations, advanced to a certain point in policy, offer brute animals to their divinities. At a more barbarous period, human victims are offered; and in the conduct of the most civilized communities, about which history furnishes information, we have a singular proof of the observation that extremes meet. For among them also, human victims are sacrificed. It does not signify though there be a little difference in point of ceremony. The result is the same; only that in refined states the number of victims is incomparably greater, and at least in proportion to their population.

Every apartment devoted to the circulation of the glass, may be regarded as a temple, set apart for the performance of such

sacrifices. And they ought to be fitted up, like the ancient temples of Egypt, in a manner to shew the real atrocity of the superstition that is carried on within their walls. Then, and not till then, will every person be put fairly in a condition to judge whether he will join in the celebration of these abhorred rites. Among the subjects, which may with propriety be selected either for representation, or for exhibition in nature, the disorganized liver, and the complaints consequent upon its disorganization, would form some of the most appropriate. It has hitherto been very much in vain that anatomists have taken pains to preserve in their museums, and to describe in their writings, the changes, which can be induced upon this viscus:—how it is sometimes indurated in its substance, starred on its surface, and has its edges crisped till they bend forwards; how it is sometimes rendered preternaturally tender; and at others, studded with white, yellow, brown, soft or hard tubercles. It is, I say, very much in vain, because these common incidents in the human body, and effects of the common mode of living, are kept out of the sight of those who would often avoid the mischief, had they that ocular demonstration of its existence, and knowledge of its

origin, which the physician can seldom turn to any considerable account for the benefit of the diseased.*

* I have observed, on a former occasion, that in the annals of humanity, there is no trace of any rich man having had the heart to promote or diffuse the knowledge of his own nature with the spirit, with which the late Duke of Bedford promoted the important, but very subordinate science of agriculture. It may be added that among our shoals of artists, there is no vestige of any one bending his talents towards the same object. Yet in this walk, what good may be done with a fiftieth portion of the genius of Hogarth. A set of sketches, contrasting our customs with those of savages, in their tendency to disfigure, enfeeble, and demolish the human frame would, I suppose, require scarce any thing beyond decent skill in managing the pencil. These sketches, with accompanying explanations, should be offered to the public in all shapes, and at all prices—from that of poor Richard's Almanack, to the style of magnificence, in which the engravers of different countries have degraded their skill to deck the senseless effusions of the fanatic, Lavater.

An infinity of subjects present themselves on the first glance. What is there, for instance, in the refined Briton with his features all obliterated and his face all carbuncles, that renders him unfit to be a companion to any tattooed antarctic savage? If the East can produce its Faquirs with their legs and arms distorted and rendered useless by constant confinement to the same position, cannot the West match them with figures, equally disabled by their own endeavours? For my part, I know no right our crippled bacchanalians have to set the pleasures they derive from the process, by which they have been reduced to their present

In this country it is less common to be immediately destroyed by a disease of the liver. Other fatal complaints arise at the same time, or are the consequences of this. One kind of jaundice, and that the worst, is the result of the disorganized structure of the liver, or of that of the neighbouring parts concerned in

state, above the satisfaction the Faquir finds in being followed and feasted by his countrymen and countrywomen. The motives of the Faquir of BRAMA seem of a more refined and respectable character than those of a Faquir of BACCHUS; implying greater elevation and force of sentiment.—Among this or that uncultivated tribe, it may be the fashion to squeeze the head into an unnatural form—But we—do not we also take pains to derange the interior full as much as they can disfigure the exterior?—The hordes of the wilderness, it is true, sometimes practice horrid mutilations. But then they suffer the residue of the frame to enjoy its full measure of vitality. But we drain off from every fibre its spirit and strength, leaving a vain image, stuffed out to the human dimensions with the dregs of nerve and muscle.—In fact, whenever the Genius of civilization shall take it into his head to compare notes with the Genius of barbarism, he may adopt the language, in which some modern versifier makes the muse of painting address the muse of poetry—

“ ——— A son of mine

“ Has more than followed every son of thine.”

I doubt much if the Genius of barbarism can justly pay himself the same compliment.

digestion, which are liable to suffer from exactly the same causes.

But dropsy is the usual severe fate of those drunkards, sots, or moderate wine-bibers, who have persevered till an alteration has taken place in the substance of this master gland. Many writers on pathology have taught that when it has become dense and hard, so as, if cut into slices, to exhibit a more solid texture than natural, it presents an impediment to the free transmission of the blood. By the accumulation of blood in one set of vessels, another or those destined to throw out the lymph into all the cells and cavities of the body, are thought to be stimulated into more vehement action. Hence an accumulation of lymph or water, as it is commonly called, in the belly; or in the chest, of an enlarged liver press upon the diaphragm. Others place the origin of dropsy, accompanying a diseased condition of the liver, in torpor of the lymphatic vessels, induced by reiterated excitement. On account of this torpor, the lymphatics return less liquid into the circulation than the exhalants throw out; and what is thus continually left, accumulates till it forms a swelling in some outward part, or in others, inaccessible to the senses, acts an impedi-

ment to the functions of vital organs, and puts a lingering and cruel termination to life. According to this view dropsy would arise from the same over-stimulation of the lymphatics, which weakens all the other parts of the body at the same time.

Nothing could be better adapted to apartments in which the orgies of Bacchus are celebrated; nothing more like to preserve those, who unwittingly join in the celebration, than bloated dropsical figures, some overwhelmed by death-like languor, some starting out of their sleep under those horrors, which water in the chest brings on, and others in one of those gasping-fits, which come on with greater and greater violence, till the lungs are entirely overwhelmed by the increasing inundation.

It is curious to observe the difference of degree in which the two sexes are subject to disorders of the digestive organs, and to their consequences. Inactive women and effeminate men are almost alone subject to the more curable species of jaundice. The passages, through which the bile flows, have little power of propelling this fluid. Its discharge depends on the contraction of the nearest muscles and of the intestines. Now whatever hinders the propulsion of the bile

favours the production of jaundice. For the same reason, the slighter jaundice arising from the sluggishness of the parts, yields so readily to emetics, to purgatives, or electrical shocks; and its return is so easily prevented by bodily exercise. But incurable jaundice, depending on induration of some of the contents of the abdomen, would be confined to the intemperate, if the stomach and its dependencies were less associated with mental agitation. In like manner the sex, more habituated to drinking, is more subject to those liver-complaints that precede dropsy. And if women are not totally exempt from them, it seems to be, in part, because the small quantity of fermented liquor, which women take, in unthinking obedience to custom, has sometimes as pernicious an operation upon their viscera as more copious draughts upon those of men. The seasons for tubercles in the liver and in the lungs are very different: Tubercles in the liver are rare in the young, and progressively more frequent as life advances. For this, the assigned reason perfectly accounts. Violent stimulation, often repeated, ensures the effect. However, as the mortality from intemperance now usually happens at a more early date than in former times, we must sup-

pose the preliminary steps also to occur earlier. If intoxicating beverages continue to make a part of our diet, and if our habits of sedentary indulgence go on increasing, the schirrous liver will become common in the prime of life; and perhaps, in men, diseases of the chest will be altogether supplanted by diseases of the abdomen. What pity that so little can be gained by the change!

Other causes disorganise the liver. For example, repeated ague-fits. But as the fear of having an ague too soon cured, is banished from almost every breast, it would be useless to insist upon this point. In some of the American states, I suspect that neglect of agues cuts short many lives by leaving an opportunity for the formation of abdominal diseases.

Mercury is well enough known speedily to destroy subjects, predisposed to scrophula. But its effect in laying the foundation of remote fatal disorders, has not been sufficiently remarked. I am disposed to think that it sometimes counteracts intoxicating liquors, but much more frequently affects the structure of the abdominal viscera. In repeated experiments on animals, whose food and manner of digestion resemble those of man, I have witnessed its prodigious power to stimulate the liver; and I believe there is no organ—not even the

salivary glands—upon which mercury has more action. This is known indeed from its medicinal operation. But that operation is by no means always salutary. In persons, who had avoided fermented liquors of every species from their youth up, I have known the liver become as much indurated after the inordinate use of mercurials, as in any dram-drinker. The deleterious effects of this mineral, whether immediate or remote, ought to interest the friends of young people more in the anti-venereal power of acids. For myself, I continually see, and continually receive confirmations of this power; and immediately on the conclusion of these Essays, I intend to proceed to a public trial, which I hope will contribute somewhat towards checking the endless mischief, resulting from mercurials, in cases which can just as successfully be otherwise treated.*

WHAT expectations can be formed under the preceding Disorders.

A great cloud is left upon the powers of most substances, employed in medicine, be-

* See *Testimonies respecting the use of Nitrous Acid*, collected by the Author, and the other Tracts, relative to this controversy.

cause physicians have been at little pains to record the history of patients, subsequent to their recovery! Three things, therefore, of the first importance remain very inaccurately known; the first, what collateral injury is sustained from different remedies; what probability there is of the return of different disorders; and thirdly, what degree of restoration the medical art is capable of bringing about in given cases.

Diet and drugs seem to be efficacious, nearly in the order in which the several diseases have been enumerated in this Essay. By sobriety, exercise, and other means, alacrity and strength may be almost compleatly regained, while there is yet no very sensible alteration in the structure of the digestive viscera. But this becomes less and less practicable in proportion to the change. The liver can certainly, in many instances, be reclaimed after every sign of disorganization has shewn itself. The symptoms, at least, can be removed, and the usual consequences kept off for a considerable time. For a doubt will remain upon this point, till the diversities of which the human organs are susceptible, and the causes of these diversities shall be taken up as a general concern, and not left to the inadequate resources and opportu-

nities of one profession. By multiplied and continued experiments on animals, it would be easy to attain a high degree of probability concerning what takes place in the interior of the human body. Thus if instead of a pack of hounds for the miserable purpose of running down a hare or a fox, a man of fortune were to keep an equal number of omnivorous animals with a inembranous stomach, and to diet part of them as many men of fortune diet themselves, a liver-complaint would be produced in the majority. We are pretty certain of this from the history of hogs and horses, fed from the distilleries, and also from the arts employed to provide large livers for pies. Different lots of the animals, so subjected to experiment, ought to be put at different periods upon a healthy course, and some might be medicated. The comparison of the viscera of those that had been always healthy, and of those that had suffered in their health, would inform us much better what we ought to believe respecting the variations of the human liver, than we know at present.

It is often found impracticable even to relieve the dropsy of intemperance. The dropsical can have no reasonable expectation of being again enabled to enjoy the pleasures of existence in full measure. In that dreadful complaint, dropsy of the chest or lungs, the

fox-glove in particular, and sometimes other medicines, will often procure a respite; and the patient will seem to himself quite renovated. But the gleam is generally short. The tide flows back. The distress recommences. The same means indeed commonly procure another interval; but it is less perfect and shorter. At last, it comes to be as on board a ship on springing a leak that cannot be stopped. No sooner do the pumps cease to work, than the water rises in the hold. If medicine discharges the water one day, it is collected in as great quantity the next. The absorbents however now soon begin to be insensible to the spur. Then the horrors of slow suffocation commence, and a succession of spectacles are presented, at sight of which the reflecting bystanders may well regret being endowed with animation, and may envy the very stones under their feet for their insensibility.

Some hydropics are happy enough to be saved a part of these miseries by sudden death. Instead of a slow accumulation, the water seems now and then to collect all at once; and dropsy of the chest begins and ends in a few hours or minutes. At other times, after an attack has been relieved, a second is thus anticipated. There is either an instantaneous effusion, or the organs in the thorax, having been injured by the

same causes that led to the production of dropsy, cease from their functions in a moment. This accident has been falsely ascribed to medicines, formerly taken. But it is proper to the complaint, and was observed before the medicines, to which it has been ascribed, were brought into use.

DESTRUCTION OF NERVOUS POWER.

Loss of muscular power and of feeling is occasioned by a vast variety of causes. Instances are related of palsy, immediately subsequent to exposure to severe cold. Medical writers remark that fishermen, and persons in in general who are much exposed to wet, are subject to the same disease. But perhaps they have not sufficiently distinguished the loss of motion, subsequent to rheumatism, which is a complaint very different from that, which I mean to consider in the present section.

Metals in vapour and in other states, as lead, arsenic, and mercury, are often the occasion of that real, original palsy which seems to begin in the nerves themselves. But the public is sufficiently warned against these noxious powers. The effect of violent blows on the head need not be insisted upon here. Respectable authors

mention a paralytic affection of the whole side from violent coughing, excited by a morsel of food in the wind-pipe *. Weakening losses of blood are attended by the same consequences. The passions of the mind have no less power to deprive the nerves of their properties. Joy is adequate to this as well as fear. A foreign writer records the case of a man, whose system was shaken by unexpected good news, and whose articulation was impaired on every similar occasion, till at last he fell into compleat hemiplegia or loss of one side (*Scheidemantel v. d. Leidenschaften.*) A young sturdy peasant is mentioned by Tissot as having had a stroke of one arm and leg on falling into a passion, while he was in liquor. Other causes are of less general occurrence. But on examining the life, which paralytics have led, we find, in an immense majority of instances, that they have been given to the abuse of fermented liquors. In the set of experiments, formerly quoted, on horses, it appeared on dissection that those which were killed under the influence of spirits or of wine,

* Hofman, Med. System, IV. p. 4. obs. 13. This person however was well prepared for the stroke. He drank spirits, had suffered much anxiety, and had even brought on the jaundice by fits of anger.

had an unusual degree of redness on the surface, and in the interior, of the brain. These traces of excessive action in the blood-vessels correspond to phænomena in common life, too well known to admit of description. Considering both together, we cannot wonder that the temporary apoplexy of intoxication should, by many repetitions, be at last converted into immediately fatal apoplexy, or into such an attack as leaves hemiplegia behind it.

Between compleat health and this catastrophe, the interval is frequently long. The changes too from the time when the nervous energy begins to be impaired, to its compleat abolition, proceed insensibly. Strictly speaking, whoever has less feeling or voluntary motion than he would have had at any given period, if no noxious power had operated upon his nervous system, may be considered as an incipient paralytic. But it may be of use in the way of caution to note the symptoms that more certainly prognosticate, and more immediately forerun, a violent seizure. Among these, the principal are feelings, chiefly referred to the head, such as deep-seated, heavy pains, particularly behind, that give an idea of pressure, and are not symptoms of any other known complaint. These are more portentous, when accompanied by

ringing in the ears, by difficulty in moving, by slow, clumsy, difficult, or unusually stammering articulation. Inclination to sleep with hearing or vision impaired for a time, and then returning to their ordinary acuteness, are among the number of the harbingers of apoplexy. Accessions of giddiness, with loss of memory, imply that condition of the organs of sensation in which, on a slight occasion, an apoplectic fit may supervene. For of different individuals, equally pre-disposed, it is to be remembered that the fate shall be different according as they are exposed to certain accidents or otherwise. An exertion of the muscles, an emotion of the mind, an acute disorder as a malignant fever or the small-pox, shall overset one person, while another shall escape, because no such trying occurrences befel him.

A passing numbness of one side shall precede hemiplegia many years. The greater number of apoplectics conceal such feelings, though it is probable that they generally raise apprehensions. A person, who not long since died suddenly, mentioned to me the frequent return of those partial numbnesses for years before. He was not insensible of their signification, and once feeling so while the taylor was busy about his person, said

“ that he probably should never want the
“ suit of clothes, as he distinctly felt Death
“ taking measure of him for his shroud.”
Scheidemantel tells of a patient, who felt numbness of his hands and feet, with formication, or a sense of ants creeping upon his skin, full ten years before the fatal stroke. I think that great liability in old people to lose their speech, or the use of their hands in severe weather, must be regarded as a disposition towards palsy.

Frequent nausea also or vomiting in old people (*vomitus grandævorum*) is a suspicious sign. So, at an advanced age, is frequent mastication without food, in the judgment of some; frequent yawning; deep laborious respiration; depending upper eyelid; slabbering of the saliva; bleeding at the nose; involuntary tears; flashes of light or dark spots before the eyes. But several of these indications must be deemed much more uncertain than the former, which are in fact slight paralytic seizures. It is of the utmost consequence to attend to these warnings, because by a due and cautious change of regimen, assisted by medicine,* the dreaded event can almost always be prevented.

* The chief of these remedies I believe will prove to be

The first fit of apoplexy, it is well known, sometimes proves fatal on the spot, sometimes in the course of a few hours. But when the event is not at once fatal, it may be useful to know the subsequent changes, in order to be able to judge of the value of the common means of cure. Few, who have suffered an apoplectic fit, emerge from it entire. In the great majority, we observe a more or less perfect deprivation of loss and motion in some part, or of perfection in some of the senses. The lessened mobility or sensibility of one side of the body is a common consequence. These faculties, however, very frequently return in some degree; and the

nitrous oxyd, or *gazeous oxyd of azote*, of which Mr. DAVY has given the public so masterly an account from the Pneumatic Institution (*Davy's Researches, Johnson*). This gas is always safe, generally highly agreeable and salutary to paralytics. Its action has nothing equivocal. In the first trials, it was occasionally withheld from the patient, in which case his disorder was stationary or retrograde, though he had been improving under the use of the gas, and improved again upon returning to its use.—But the most decisive and astonishing proof is a phænomenon, which various persons have witnessed with me.—Paralytic patients have had the perfect command over their diseased limbs, while breathing this gas, and the moment after have returned to their former state—till by continued use of the gas, the limbs have been more or less restored.

invalid is able to make considerable use of the affected parts, till he is overtaken by a new seizure; and this will be either distinctly marked by an entire and instantaneous abolition of sense and motion; or it will happen unperceived in the night, and be known only by its effects.

Hence, when, under any course, some paralytics insensibly recover their bodily powers to a certain point, while others continue stationary, and the remainder are rendered worse or destroyed by fresh accessions, the probability will be that the treatment itself produces no effect, good or bad, but that all the changes belong to the mere progress of the complaint, as it varies in different individuals. This probability will arise near to a certainty, if, in collateral phenomena, there be no evidence of a specific virtue in the means employed.

This character seems to apply to a number of remedies once in vogue but now discarded. It suits none perhaps more exactly than one still in request—I mean the water of the hot springs at Bath. Some have condemned this water as bringing strokes of apoplexy on the paralytic. They have known such invalids relapse under the use of the water. But so they would have done at home.

Others have founded a favourable judgment on the improvement they have known to take place in certain instances. But occasional improvement takes place independently of all external or internal applications. So that we may acquiesce in the judgment, which Dr. HEBERDEN, an observer, above all praise, faithful and diligent, founds upon his long experience:—*that these waters are neither in any way detrimental nor of the least use in palsy.**

The other terminations of paralytic or apoplectic seizure are less applicable to any practical purpose. They are very various, as epilepsy, impaired faculties, or madness.—In extremely rare cases the senses have become more acute; epilepsy has ceased; and I knew one person, whom a first stroke deranged, and a second restored to his intellects. Paralytic complaints are more frequent in advanced life, and among the male, a may be expected from the nature of that very common exciting cause, intemperance. That they are not confined to any period or sex is only what must be expected, since the system at all

* Posthumous Commentaries—p. 303, of the latin edition,

periods is liable to sudden shocks; and any of these may bring on palsy.

GOUT.

In attempting to speak of this disorder, one feels as if on *tabooed* ground. The public has unlearned an infinity of false opinions with regard to other disorders, but the prejudices of the darkest ages cling as fast as ever to the idea of gout.

It is the result of large and sure experience that the gout is very much confined to those who lead a life of indulgence and intemperance in regard to spirituous liquors. This intemperance must, as in all other cases, be relatively considered. The condition is not absolute. It is taking too narrow a view of human nature to suppose gout producible only by hard living, or by some use of fermented drinks in the descendants of gouty ancestors. One of the perfectly abstemious patients above-mentioned as affected with a liver-complaint, afterwards had regular fits of the gout without any change of diet or any medicines, which could be considered as equivalent to alcohol. As to labour, it doubtless exempts multitudes from the gout, and has been known to remove it.

Among four thousand poor *chronic* invalids, scarce two instances occur of gout in this part of England. One of the greatest martyrs to the gout I know, told me that in the quarter of a century and upwards during which he has been gouty, his freest year was that of a warmly contested election, at which he was candidate for a county. He both drank and exerted himself infinitely more than at any other period of his life.

What clear experience, without any hypothesis, teaches respecting the nature of the gout, is in brief as follows.

It scarce ever comes on before the æra of puberty. It seizes the ball of the great toe, which soon becomes of a deep red colour, and afterwards swells. The first paroxysm seldom endures above a day and night with unabated violence, but, when it is considerably mitigated, it again seizes the same or some other part of the foot, and lasts for an equal length of time. These paroxysms go on with more or less intermission for a time seldom short of nine days, and seldom exceeding a month.

Not unfrequently, when the swelling has nearly subsided, and the patient looks towards recovery as an event near at hand, another

fit shall come on, and run through its course, as before.

A long interval of ease is frequently enjoyed after the first fit. Sometimes this interval extends to four or five years; it is seldom less than two. This shall go on for a second and a third accession, and, on all these occasions, the gout shall steadily continue in the foot in which it begins.

After several repetitions the fits occur more frequently, and the affection shall fly from foot to foot; from a foot to one of the knees; from the knee to the wrist. It shall at times transfer itself to the chest, the neck, or to one of the senses. Thus gouty pain in a joint shall cease, and instant deafness come on, which again new pain shall sometimes remove, though it sometimes becomes permanent. Lastly, the stomach shall be seized with dangerous violence.

In an old case, the lower extremities shall be so debilitated that the patient shall not have his feet eight months in the twelve out of gouty shoes. The legs are left crippled, and crutches become necessary. As the lameness begins to go off, the patient is cut down again by a fresh fit. In this debilitated state, the nature of the attack shall change; so that once in six weeks there

shall be a swelling without pain or discolouration. This is sometimes called the *dumb gout*—I suppose, because there is not the usual agony to extort groans.

The *sinews*, as it is said, *become contracted* at this latter period; that is, the muscles are disorganized, and no longer capable of that contraction and dilatation, upon which voluntary action depends.

In the mean time, the gouty, besides having to struggle with every thing that pain has of severe, are annoyed with all the inconveniences that attach themselves to a bad stomach. No hypochondriac is subject to more terrible depression of spirits. Meanwhile concretions of a chalky consistence are generated, and sometimes in such abundance, and of such size, that it seems as if the skin had been stuffed with plumbstones.

Thus it is that athritics exist, when the gout thickens upon them. Is their death more enviable than their life? It happens sometimes, after many alarms of the same kind, in consequence of a stomach seizure. This is not however their most common, though I think clearly their most desireable end. The greater part are shared between dropsy of the chest and palsy. One or other of these disorders is commonly the fate of

those, who leave the disorder to its own course, without resorting to any means of relief, except perhaps the use of the Bath waters.

If such be the usual origin, progress, and termination of the gout, can it really deserve to be regarded in the favourable light it usually is? Is it reasonable to desire, and wise to cherish such a complaint? Or is the eagerness, with which we hear it sometimes invoked, to be placed among the most egregious examples of the *vanity of human wishes*?

Either the gout itself, or the gout-conjointly with the regimen that first brought it on, begins at the circumference, and proceeds to the centre of the constitution, injuring every organ it affects, and at last rendering them incapable of carrying on life. This, we see, is the clear result of the history of those whom it affects.

Many arthritics are healthy during the intervals of fits, particularly if those fits be regular. This I apprehend is one principal reason why the gout has been able hitherto to maintain so advantageous a character. But the fact really proves nothing to its advantage. The character was established among the rude and hardy ancestors of the present inhabitants of Europe—men of an

iron frame, which it required the long-continued operation of luxury to soften, and of debauchery to wear down. Does any one think it so obvious a truth that these men could not continue robust to a good old age, or even to the middle term of life, without paying so severe a fine for the renewal of their lease of health?

But perhaps it is imagined that *the dreadful disorders which follow in the train of gout, are kept off by its occasional recurrence*. There is nothing on the face of the facts to persuade a person, who reasons with the smallest degree of caution, that this is more just than the opinion directly opposite—namely—that *such and such person become dropsical or paralytic, because they have suffered so much from the gout*. Certainly, the gout seems to possess every qualification for rendering either the lymphatics or the nerves incapable of their functions.

Analogy appears strong against the preventive power of the gout. I have already said that the ague will be followed by dropsy in some habits, if it be suffered to hold on its course unchecked. It may be added that, in other habits, it will be followed by apoplexy. Now when the Peruvian bark was

first introduced, mankind were weak enough to suffer themselves to be persuaded, in opposition to all experience, that this dropsy and this palsy were the products—not of the disease—but of the remedy—of that very remedy which, if used properly and in season, is sure to prevent the disease from producing them. Some other disorders of frequent recurrence are followed, like the gout, by dropsy and palsy; and I do not believe any one would assume, without the smallest evidence, that they exert the preservative power attributed to the gout. —Mrs. —, aged 72, had returns of erysipelas for above twenty years. No considerable difference was made in the treatment of the different attacks. For a few years last past, she appeared to be drooping; and a year and half ago she had a dropsical swelling of the legs. This was removed by diuretic medicines. But not long afterwards, she was seized with an apoplectic fit, out of which she was recovered with the loss of her right side. Such was the tone of her health, when she was first seized with erysipelas that any competent judge would, at once, have been satisfied that there was then no call for the interposition of erysipelas to save her from dropsy. So also would competent judges

decide as to a large proportion of our country squires and citizens, when the gout *first* begins to precipitate them, before their time, into the autumn of life. There is no room for supposing that such subjects would have any dropsical or paralytic disorder, if they had not the gout. There is no room for supposing they would have had the gout, if they had not done all they could to bring it upon themselves.

But perhaps if the gout does not operate as a preventive, it does as a cure. It may remove worse, or at least some disorders, actually present.

It does not prevent or remove cancer. I have at present a female patient more than enough harrassed with gout, for any medicinal purpose it could answer, and yet she has lately been obliged to submit to the extirpation of a cancerous tumour of the breast. It does not remove induration of the liver. That may very commonly be ascertained. It does not remove asthma, as I have had occasion to see. It does not generally remove or relieve indigestion, as I think most arthritics would bear me witness. When it is thought to do so, the following fact, recorded by Dr. Tode of himself, will shew on what terms it renders this service. He

was one of those who wished for the gout.
“ My case is singular,” says he. “ As long as
“ I was hypochondriac, and had to contend
“ with the concealed gout, I could not bear
“ the smallest quantity of rye-bread. It
“ caused excessive sourness. - - - Afterwards,
“ when I was visited by the regular gout,
“ this disagreeable effect ceased at once.
“ From time to time I have suffered at a later
“ period from an intermission of gout, and
“ also therefore from acidity. But within
“ about a year, that is, since *I have had a*
“ *palsy of the tongue and of one hand*, and
“ have almost got over it again,* I feel not
“ the least inconvenience from rye-bread.”
So that according to this account gout and
palsy were pretty nearly upon a par in restoring
the digestive power. Perhaps the difference,
at any time, is little greater than that
between laurel-water and *acqua toffana*.—
Another disease which the gout does not remove
is stone and gravel. We see people labouring
under both; and both frequently derived from
the same intemperance. I have known some
patients worse in respect to pre-

* No wonder the palsy is better. This we have seen is common, till the next stroke. Besides, poor paralytics are apt to flatter themselves not less than the consumptive.

vious diseases, after strong fits of regular gout. But for the present I shall suspend the relation of my own experience for the sake of introducing an extract from Dr. HEBERDEN, wishing that the passage may induce candidates for the gout to consider the whole of what he says under that head and in various other articles, concerning the insufficiency of gout as a preservative.

“ Although the gout recurs but seldom at
“ first, in time it grows more familiar, and
“ the fits are not only more frequent, but
“ last longer, so that no interval remains for
“ the enjoyment or business of life. The
“ patient, while in pain, is as helpless as a
“ child, though there are many discourage-
“ ments from administering the help he
“ needs, with as much alacrity as to chil-
“ dren. It scarce deserves to be numbered
“ among the evils of gout, that after poison-
“ ing all the pleasures of life, and wasting
“ the bodily faculties slowly, or abolishing
“ them at once by a paralytic or apoplectic
“ stroke, it occasions premature death.

“ Few however are either ashamed or sorry,
“ though in such dreadful plight. On the
“ contrary, many court the disease; and, if
“ they feel themselves disordered, are pleased
“ at the idea that gout is at the bottom,

“ and console themselves with reflecting that
“ they shall some time become gouty. They
“ even take much pains to secure the event,
“ though luckily for themselves, they are
“ often disappointed in their wishes.

“ It is not easy to say on what account,
“ in certain countries and ages, certain dis-
“ orders have been deemed reputable, while
“ others have been looked upon as disgrace-
“ ful, though in the disorders themselves,
“ and the manner in which they are con-
“ tracted, there has been no ground for
“ either sort of estimation. — — — Some
“ affections have become honourable, be-
“ cause they happened to some particular
“ great man, or because they chiefly befall
“ the fortunate mortals, that abound in lei-
“ sure and all the good things of life. When
“ Louis XIV. had a fistula, many of his
“ subjects would have it that they had a
“ fistula too: and the surgeons of those
“ days had no small trouble with these
“ *malades imaginaires*. Had there been in
“ France, a mineral water which could have
“ given the fistula, people would have
“ flocked thither, as they now flock to Bath
“ to get the gout. For this is the complaint
“ in esteem among the English. It is this
“ which is desired by those, who are unac-

“ quainted with it; which is boasted of by
“ those who believe they are on the point
“ of an attack, but which those seriously
“ deplore, who really have to contend with
“ so cruel a calamity. Hence, by a singular
“ sort of contingency, more pains are be-
“ stowed to contract than to drive off the
“ gout. For so much honour is paid to this
“ malady, that arthritics ascribe all their
“ other ailments—not to their having had
“ too much, but to their not having yet
“ had enough of gout. So that the gout
“ not only escapes blame as being the cause
“ of these ailments, but is wished for, as if
“ the only chance of health consisted in
“ repeated fits.

“ From attachment to life or dread of
“ death, most men are loath to feel or own
“ the signs of a shattered or ruined consti-
“ tution. These signs are therefore assigned
“ to any cause rather than to approaching
“ and inevitable death. Hence, when the
“ powers begin to fail, they easily suffer
“ themselves to be persuaded that their ill-
“ ness is owing to *latent gout*, and that
“ nothing is wanting to their entire resto-
“ ration, but a regular fit. But, not to
“ notice the slight probabilities on which
“ the hope of latent gout is founded, I

“ should be glad to know, whether that
 “ which is so confidently talked of is al-
 “ together certain—I mean, *whether regular*
 “ *gout expels * all other complaints ? and*
 “ *whether one can produce or excite the gout,*
 “ *without heaping new evils upon the old ?—*
 “ In countries where the itch is the most
 “ common disorder, it is also held to be
 “ salutary. Formerly the ague was believed
 “ by many physicians to be the handmaid
 “ of health. Some think it so still. There-
 “ fore they congratulate themselves and
 “ their friends on its arrival, and take par-
 “ ticular pains that it should not quit them
 “ too soon. Time has nearly destroyed
 “ these opinions among us. And should a
 “ remedy for gout be discovered, as effica-
 “ cious as those we employ against ague or
 “ itch, we shall learn at least how safely and
 “ advantageously the gout also can be for
 “ ever removed.”

“ To learn that gout is an effort of
 “ nature to throw out I know not what viti-
 “ ated humours, we must appeal to expe-
 “ rience, as the only adequate arbitress of
 “ this question. Some, I confess, are de-

* “ If the gout prevents every thing else, would not
 “ one have something that does ?” *Hor. Walpole's letters.*

“ lighted at the first onset of gout, as if it brought
“ all sorts of happiness in its train. With
“ nothing but entire restitution in their heads,
“ these people easily fancy themselves wonder-
“ fully benefited—a common sort of persuasion
“ on resorting to a new physician, or a new
“ remedy. But, not to dwell on such con-
“ siderations, let us consult those who have
“ been sufferers enough to know what gout is.
“ Of such I have seen a great number, and
“ noted down their cases; and there have been,
“ to say the least, TWICE AS MANY who have
“ either found no alleviation of former com-
“ plaints, or in whom the gout has occasioned
“ new ones, as of those to whom it has ap-
“ peared to be of use. In my judgment, too, the
“ mischief imputed to it was a great deal clearer
“ than the benefit. Doubtless, we sometimes
“ see other disorders subside on accession of
“ gout. But the same thing, as I have often
“ observed, happens with regard to fever, palsy,
“ asthma, small-pox, and insanity. Yet nobody
“ would call these salutary disorders.

“ People, seldom and slightly affected, are
“ scarce hurt. So, when epilepsy is of rare
“ occurrence, the patient dies of old age, not of
“ the complaint. But some constitutions are
“ damaged from the first onset of gout, and
“ suffer more and more till they are completely

“ demolished. Should we doubt whether it is
“ the gout that does the harm here, we must, at
“ least, be very certain that it has not been
“ serviceable.

“ In gout of long standing there is less pain.
“ Hence may have arisen the idea that the
“ decline of the gout may have occasioned that
“ ill-health, which is simply owing to increase
“ of years, to other complaints, or to repeated
“ attacks of the gout itself.

“ I remember a person, who for 15 suc-
“ cessive years had both gout and asthma. At
“ length, his constitution being very much
“ broken, he was five years without either
“ complaint. For so long did he linger be-
“ fore he died. Nobody will ascribe the ruin
“ of his health to the absence of asthma.
“ Why should it then any more be ascribed to
“ the absence of gout ?

“ After a few fits, the genuine gout returns
“ every year or oftener. But after several yearly
“ visits for 10, 12, 14, 20, and even 27 years,
“ it has intermitted for 3, 10, 12, and even for
“ 30 years ; and this without the smallest bad
“ effect that could with any fairness be ascribed
“ to absent gout. That the regular return of
“ fits is not necessary to health is demonstrated
“ by such instances. For here we see arthritics
“ missing them, even after the complaint has

“ become so fixed, that, according to the vulgar
“ notion, neither health nor life could go on
“ without its aid.

“ But however useful it may be to bring out
“ the gout when latent, or to ripen it when
“ crude; every physician must own that the
“ symptoms of gout in this state are very ob-
“ scure, and that there are none indeed by which
“ we can recognize or justly suspect the disease,
“ except there be pain, redness and swelling of
“ the foot, or unless the patient himself or his
“ parents have been subject to the disease.
“ But, without any of these circumstances, it is
“ common to refer the beginning of many
“ chronic and of some acute disorders to gout.
“ But a mistake in this matter, where it is so
“ easy to mistake, will occasion a great deal of
“ mischief. Many have been led to drink far
“ too much wine and strong liquors. I have
“ seen some patients be nearly intoxicated for
“ two or three days together, because they
“ fancied themselves in want of a fit of the
“ gout; and this they thought the most likely
“ way to procure it. I grant, indeed, that a life
“ of debauchery will readily produce this wretch-
“ ed disease. But cramming and hard drinking
“ for two or three days will certainly reduce
“ the strength, whether the gout be at hand
“ or not; and few will deny that such ex-

“ cess is hurtful, provided another disease
“ be at hand, which has been erroneously ap-
“ prehended to be gout. I have much too
“ often met not only with carious bones, schirrus
“ and cancer of the brain, and with other chronic
“ diseases, but also with some acute ones, as
“ inflammation of the lungs, of the stomach
“ and other viscera, under the denomination of
“ gouty affection. The consequence of this
“ denomination was to take spices, wine, and
“ other stimulants, till it was too late either for
“ a remedy or a palliative. This kind of treat-
“ ment, in my opinion, does not render so much
“ service in true gout, as it does mischief by
“ increasing pain and fever when this disease is
“ wrongly suspected.

“ I do not propose to enquire into the power
“ of the Bath waters, and heating remedies com-
“ posed of wine and aromatics, to excite gout,
“ if, in any case, this should be desirable.
“ After a little trial, they will, if I mistake not,
“ be found to fall short of their character. Those
“ slight, wandering pains which are felt on
“ taking anti-arthritic remedies, and are styled
“ *rudiments of the gout*, would perhaps never fail
“ to be felt, if attention were paid, in the decline
“ of life.

“ It has been thought that a large quantity of
“ sheer wine is good for arthritics. I should

“ suppose this opinion to have grown current, not
“ on account of its justness, but because it was
“ agreeable to the lovers of wine. These should
“ however recollect first, that free use of wine
“ of itself injures the stomach and impairs di-
“ gestion; and, secondly, that persons addicted
“ to wine are those who chiefly bring on and
“ cherish gout: whereas the poor, who drink
“ scarce any thing but water, have a keener ap-
“ petite with a better digestion, and scarce know
“ any thing of gout. I have seen very few
“ perfect cures of this disorder. One or two
“ wretchedly debilitated patients, on total abs-
“ tinence from animal food and wine, have re-
“ covered so firm a state of health, that their life
“ was no longer a burthen to themselves or use-
“ less to others *. But these examples are too
“ rare to give me much hope that others will be
“ so fortunate.

“ It is a question whether the patient ought
“ immediately to give up to the gout and lay
“ himself on his back to receive it in flannel,

* I have known three instances in medical men, and four in others, where the gout ceased and the health improved after leaving off fermented liquors only. I should suppose a temperate regimen, with a remedy announced below, would very generally remove the disease, or rescue invalids from their misery.

“ fleecy hosiery, or eider-down—or to strive his
“ utmost to move the affected limbs, and shake
“ off the foe, if possible. The more it is in-
“ dulged, the longer does the gout keep its
“ station : a thing the patient wishes for, and
“ what indeed he tries to secure by medicine.
“ A gouty matter is imagined to be produced in
“ certain parts of the body, and to receive daily
“ accumulation. Now unless this matter is
“ allowed free egress, it is apprehended the con-
“ stitution will be liable to all sorts of maladies.
“ Others, on the contrary, from impatience of
“ pain, rather than from the influence of any
“ opinion, have left nothing unattempted to
“ stifle the fit in its very infancy. The great
“ Harvey, as I have heard from his relations,
“ was accustomed to remove the pain by im-
“ mersing his foot in cold water, as soon as he
“ felt the disorder approaching. I have known
“ others make incessantly efforts with the af-
“ fected limb till the pain went off, and its
“ power returned, in which they have at length
“ succeeded. Nor was this repulse of the dis-
“ ease by violence followed by any serious bad
“ consequences. How much may be done to
“ throw off the gout, if no endeavour be left
“ untried, appears from those undoubted his-
“ tories of invalids, who, when they appeared
“ unable to stir a single limb, have forgot their

“ gout in an instant, and betaken themselves to
“ their heels with abundant alacrity, on an alarm
“ of fire or the enemy.

“ I would not propose Dr. Harvey’s example
“ for imitation to others, though he attained to
“ eighty, and died of old age rather than dis-
“ ease. I have not however found that people
“ have done themselves any injury by preventing
“ the gout from fixing, by exertions of the limb.
“ If indeed, during a fit of the gout, the body
“ were disburthened of any matter of disease,
“ how comes a purge soon after it is over to
“ occasion a relapse of equal violence? This has
“ occurred not only to me, but to other physi-
“ cians of the first authority. The same thing
“ sometimes happens from a blow, a strain, or
“ the puncture of a gnat. By these facts, the
“ doctrine of an accumulation of gouty matter,
“ as occasioning the fits, is rendered extremely
“ difficult of conception.”

Such are the sentiments bequeathed to posterity by a physician far remote from the love of paradox. They will some time enlarge the public stock of health and virtue. They may at present make less impression, on account of the inveterate prejudice that *gout performs the good office of carrying something hurtful out of the body*. It would be in vain to ask for a definition of that *something*. But perhaps we may be referred to

the concretions for sensible evidence of its existence, or to the foul urine, where there are no concretions. In like manner, it was long believed that in all exanthematous disorders, in all disorders terminating in sweat, or in any other evacuation, that the humours were defæcated, or cleared of a certain scum, by these discharges. Numbers are now living, who, to promote despumation in the small-pox, were quartered in hot apartments; a measure which no doubt contributed to their health, as much as a place in the *black hole* at Calcutta did to the health of those who survived confinement there. No reader, at this day, need be told how little it is to be desired that the eruption in small-pox should be profuse. The Peruvian bark and the mineral solution expel no morbid matter in intermittent fevers. There is, on the contrary, all the reason in the world for being satisfied that the matter in small-pox, the concretions and urinary sediment in gout, are formed by diseased action at the expense, by no means to the relief, of the constitution.

“What,” says an invalid, “is the cause of the sudden shifting of the gout from one foot to the other in the twinkling of an eye? What is the subtle æthereal matter that passes through the whole muscular system like lightning?” I scrupulously copy my correspondent’s words.

But what occasion is there for any matter to pass? Why may not actions be communicated in the human frame without transfer of substance? Will not certain applications produce an immediate sensation in a distant part? Do not some persons sneeze, as soon as cold strikes upon the hand or foot? Does not warm flannel on the skin ease the colic? An impression upon the eye from a disgusting object excites sickness. I have known a sudden loud sound occasion pain in the back. There is no necessity to suppose a transition of matter in these instances, and certainly not in any of them a transition of *morbid* matter.

One circumstance, which seems to have confirmed the prevailing prejudices, is the manner in which some desperate arthritics have gone about to relieve themselves. I have obtained evidence, which I cannot doubt, of two cases where the abovementioned expedient of the great HARVEY proved fatal. The terror, inspired by these events, is kept up by the natural transition of the gout from the extremities to vital organs. It is, upon the whole, concluded that this is a disorder, with which it is impossible to interfere without the most imminent peril—the *noli me tangere* of constitutional affections. When the habit is vigorous, and the gout has never shifted during the same fit, it is probable that cold *may* be freely applied to the inflamed joint. In opposite circumstances, it seems as if this could never be done

without danger. But as there is no moment, at which the stomach or head may not be susceptible of the gouty action, it must be rash *in any case* to reduce pain in a limb by means, that increase the susceptibility of a vital organ. Such means are cold water or substances that abstract heat rapidly. When the bowels are torpid, putting the feet upon marble, or wetting them, has expedited the operation of purgatives, or, of itself, brought about the same effect. This will explain what I mean by cold applied to the foot increasing the susceptibility of gouty action in remote vital parts. Physiology offers such analogies in abundance.

But the ill success of one method does not prove the inadequacy of another, quite different. It would be hard, if culprits, now in confinement, were to be pronounced guilty, without further enquiry, upon the evidence which convicted their predecessors fifty years ago. The mischief of cold water, for example, can be no objection to the application of leeches to lower the local inflammation, or of calomel to excite the stomach, liver, and other intestinal glands.

A superstitious habit of thinking on the subject of the gout seems, therefore, to act fatally in opposite ways. Those, to whom the pain is intolerable, blindly grasp at the nearest chance of relief, while others unnecessarily submit to have the constitution broken down, because their

dread of innocent or effectual remedies predominates over the violence of their present tortures.

In the activity of research, and the great accessibility of men's minds to reason, which distinguish the present times, it is not to be expected that an affection, bearing a great analogy to complaints which we have already learned to treat with success, should be passively submitted to, as of old. I am fortunate enough to have it in my power to offer a reasonable expectation of relief. Something less than a twelvemonth ago, an entire stranger offered me an anti-arthritic remedy of a character entirely new. He said it was prepared from a vegetable, which had not been introduced into any *materia medica*. It was described as having the property of dispelling the fits of gout with as much gentleness of operation as the bark exhibits against intermittents, and as having been in use several years with great benefit to the constitution, and almost total reduction of the disease upon the whole. I received a number of references to persons who had tried it with success. The discoverer also acquainted me with the name of the plant. He added from Dr. Bradley, the well-known editor of the Medical Journal, an attestation, purporting that the preparation would "speedily and *safely* remove the pain of gout."

On laying this statement before gouty invalids, I found some willing to hazard the trial.

In no instance has the smallest untoward appearance shown itself, though some of my patients have been mere human ruins, threatening to fall at the moment of approach, and certain to be overturned by even a slight shock. The gouty symptoms have, in general, been removed with the greatest ease and rapidity. Many of those who have taken the remedy speak with a warmth of enthusiasm, which is unusual except after some great deliverance. The disease has been sometimes, at once, dislodged from the interior; and it seems as if, by stopping at a certain dose, worn-out invalids might have what is called a healthy fit. I have been struck with surprise at the signs of improved health at the end of six months after the *occasional* use of the medicine; for it has been seldom given, and seems only necessary, at the time of the fit. In the meantime the experience of Dr. BRADLEY has been equally favourable. There lies before me a note, in which he declares himself to have used the anti-arthritic medicine in several cases of gout as well as obstinate rheumatism. “It gives,” he adds, “great relief to the patients, and generally seems to produce a perfect cure;—“ he has never seen the slightest ill effect arise “ from its exhibition; and he has reason to “ believe, from a case or two, that it will prevent a fit of gout as well as cure one.”—If the medicine shall continue to justify its preten-

sions, the discoverer expresses himself ready to disclose his secret, on obtaining a compensation adequate to the benefit he shall thus confer on society. In a very few months, he informs me, it is his intention to bring the whole subject before the public.

In irregular and ill-formed gout, no better counsel as to regimen can perhaps be given than that under the articles *dyspepsia* and *hypochondriasis*. Whether it is that the disorder has declined from the truly inflammatory form—whether it never appeared but in transient redness, pain and swelling of the foot, and soon removed to other seats—or (what is less characteristic) persons of gouty descent have felt gout-like pains without any affection of the foot, or well-marked inflammation in any of the extremities :—in these cases, as well as where the attack is regular, the digestive organs are much out of order. Wine and fermented liquors of equal strength are sometimes so soon and so distinctly injurious, that, without laying any stress upon other considerations, it seems as if it might be laid down as a rule for arthritics, *to wean themselves as soon as possible from their use* *. To this rule, puny arthritics owe implicit obedience. Cautious use of vegetable sub-

* “ I have known several arthritics who could *never indulge in a few glasses of wine* without bringing on (gouty) symptoms, but who, by a rigid and persevering abstinence

stances is equally to be recommended. Dr. READ has lately given the interesting observation of a gouty convalescent, who was repeatedly threatened with a relapse, “ from having “ barely *tasted* a vegetable acid.” (*Monthly Magazine for May 1802.*) By persons unaccustomed to cyder and perry, I have been assured that a small quantity of either has brought on a paroxysm. On this principle we may perhaps understand why the weaker wines of France are reputed *more gouty* than those in common use among the English. The former more certainly turn sour on a depraved stomach, or on one that is weak from inheritance. Otherwise, as port (according to information from those who assure me they have repeatedly ascertained the fact by distillation) may be estimated as containing one-fourth part of its bulk of brandy; and as claret contains but an eighth, the result ought to be very different, if we suppose the stomach healthy at starting, I should expect four, if not eight times as many wine-bibers to be thrown into gout, dropsy, or apoplexy, by equal large quantities of port as by claret.

I know one person with a diseased liver, in

“ from wine, kept off any fit. The late Dr. BRODBELT, of “ Spanish Town (in Jamaica), was an eminent instance of “ this.” Dr. DANCER’s *Medical Assistant*, 4to. 1800.

“ I only drank a little wine two days after being very “ much fatigued in the house, and the worthy pioneer began to “ cry SWEAR from my foot the next day.” HOR. WALPOLE.

whom a glass of port wine and a cup of strong tea equally excite pain in the right hypochondriac region. And I suppose tea in some habits, if it be of any strength and fineness, a promoter of all the disorders considered in this essay. Men, as in every disease of similar origin, are oftener gouty than women. But I think the proportion of imperfect gout in women greater than in men; the disease in the weaker sex oftener beginning with being irregular, and sooner becoming so.

In some places on the Continent an imperfect gout, which however sometimes assumes a regular form, appears to be quite epidemic among females. And as they are females to whom our genteel ranks will feel no pride in being assimilated, a knowledge of the fact may have its influence in helping to render the gout unfashionable. "The washerwomen among us," says Dr. J. C. G. ACKERMANN of Altdorf, "are
" far more subject to gouty complaints than in
" other places. Many houses are unprovided
" with a wash-house, secured against the imme-
" diate influence of the atmosphere and capa-
" ble of being heated. Hence, in the coldest
" days of winter, these poor people are obliged
" to wash in the open court in the most cutting
" winds. They are exposed alternately to cold
" and hot water. The cold moisture inevitably
" penetrates through the clothes. While the

“ upper part of the body perspires from steam,
“ the lower extremities are frozen. They en-
“ deavour to counteract these inconveniences
“ by coffee, brandy, and the like. The result
“ is, that it is scarce possible to find a washer-
“ woman above forty-five who is not a sufferer
“ from gout, though the irregular kind is by
“ far the more common of the two.”

The power of temperature to give such certainty and determination to the gout-creating action of stimulants is remarkable; and the relation excites a wish for further particulars. One can the less suppose that the author misnames the complaint, as he appears throughout his paper* well acquainted with the varieties of gout. The same identical cause, indeed, may often be observed to produce different complaints, according to the condition in which the mode of life places parts of the body. The diseases of intemperate hackney-coachmen and butchers differ from the diseases of intemperate taylors and shoemakers.

By attending to the influence of exposure, our opulent arthritics may escape many of their worst visitations. The gout observes exactly the same law as to its season with other inflammatory disorders. It is most common when pleurisy and rheumatism are most common too. It

* HUFELAND'S N. Journal, iv. 3. 31.

is rare for a person not yet reduced, and subject only to strong fits, to be seized in the fine part of the summer. This is the lot only of those whose system has become so liable to gouty action, or, in vulgar language, *is so penetrated with gouty matter*, that a stream of air, a little variety in food, the twist of a limb—agents, in fact, too slight to be sensible in any other way,—shall stir up the slumbering gout. The consequence of a catarrh is so serious, that arthritics may look upon the directions for escaping and mitigating this inflammatory affection as drawn up particularly for their use.

There are still many other maladies which persons, blindly eager for sensual pleasure, bring upon themselves; and some of them of a very harassing nature. It is thus that the stone and gravel are often occasioned. The piles befall scarce any but the debauched or the indolent. Indolence and intemperance commonly go together, if, as I have repeatedly inculcated, those things are to be considered as violent stimulants to the indolent, which are scarce felt as gentle cordials by the regularly active.

It may be asked, *Since all men must die at last, what signifies it whether the catastrophe come from intemperance or otherwise?* Doubtless I think it wise to dread the termination of existence less than its continuance in misery. But is it nothing that luxury has almost banished *euthanasia* from

among men, and deprived us of all the consolation we might draw from the good old comparison between SLEEP and DEATH?

It does not require to be professionally conversant with the sick to be sensible, that the multiplication of painful passages to the grave must equally multiply the objects of terror.

I do not, indeed, think disease much more terrible than that blank state which so often intervenes between the offices of the medical tribe and just health. This is the state which more particularly requires to be delineated to the public eye. But, on looking back, I perceive that I want pencil and colours alike. There is, I think, however, one way in which the reader may attain a just idea. Let him well consider a knot of children at play, of whom the boys are yet unbroken by the tyranny of PRISCIAN, the girls by that of the GRACES. Let him then transfer his eye to a fashionable boarding-school, to a rout, a mess-room, or singly inspect our youth newly risen from repose. Let him employ a month in analysing these objects into their minutest differences; and then he will have some faint comprehension how it is with thousands, who, under a gay exterior, have the springs of the body all broken by violent action, while those of the mind have little left of their elasticity—unless, what often happens, they have become rusty from disuse.

END OF VOL. II.

APPENDIX

TO

VOLUME II.

[For the following observations, the author is indebted to M. FITZGERALD, Esq. a gentleman well known to have practised long and very extensively at Madras. Mr. F. not only had endless opportunities of seeing the disorder of which he speaks, but himself was a severe sufferer : and it was during a residence at Clifton, in consequence of the injury his health had sustained, that the author had an opportunity of learning what an ample fund of accurate information he had treasured up during his residence in India. He sincerely hopes that the public will one day be the better for papers, which bespeak a degree of industry rare even in a temperate climate.

The reader will perceive that the following remarks must be placed as an appendix at the end of the last volume. Should these essays wander into our East or West Indian possessions, or into the hands of persons going

thither, the masterly description of the approach of the liver disease of those regions will be found particularly worthy of the notice of every European. I would not disjoin what is said of the cure, because that goes to demonstrate the necessity of early attention to the complaint.]

T. B.

NOTES ON THE LIVER ESSAY.

1. **I** HAVE perused with attention Doctor Beddoes's valuable Essay on Liver Complaints, and can answer from much experience of the facts, that all he has therein advanced, corresponds with the appearances observed to take place in persons, prone to the accession of this disease in the climate of India, particularly on the coast of Coromandel, where derangements of that viscus are most frequent.

Heat, and the abuse of spirituous and vinous stimulants, are certainly the great causes of the mortality occasioned by hepatitis among the officers and soldiers of his Majesty's regiments, when recently arrived in India; and as many men still continue to suffer from a total disregard of these material points, it is of the first importance that it should be generally known

to the commanding officers of corps, proceeding to India, that abstemiousness, as Doctor Beddoes strongly inculcates, is certainly the best preventative of this disease ; and what ranks next to it in importance as an established rule, is carefully to avoid exposure to the sun, especially unnecessary exposure.

A detachment of the royal artillery which joined Lord Cornwallis's army in the year 1790 in the Mysore country, soon after its arrival in India lost most of its men by liver complaints, in the course of the ensuing campaign ; and his Majesty's 76th regiment of foot, from similar causes, continued during the whole of that war to be the most sickly corps in the field, having suffered prodigiously from hepatitis and bowel complaints dependent on disorders of that organ.

2. The natives of India, Doctor Beddoes may rely, sometimes suffer in very hot seasons from acute inflammation of the liver, *without the assistance of intemperance*, to which they are very rarely addicted : but I have remarked that Sepoys of the Mahometan cast, native Portuguezes, and Pariahs who are prone to abuse

of spirituous potation, are frequent sufferers from liver complaints, in seasons of the ordinary temperature on the coast of Coromandel.

3. A very frequent mode of the approach of a liver attack in India, is by irregularity in the state of the bowels continued for several days, nay weeks. The patient complains at first of a slight purging, attended with gripes: this continues without material aggravation for several days, after which the stools become mixed with a little blood, and there is an increase of the griping immediately before going to stool. All this time the patient seems otherwise to enjoy every appearance of health, and is not alarmed at the purging, from its not being attended with fever, loss of appetite or strength, or any particular irritation about the rectum. There soon however come on slight heats in the palms of the hands, a disrelish for particular kinds of food not observed before, and a gradual diminution of strength, accompanied by profuse sweating about the breast and forehead, after every attempt at the usual exercise. In this state the patient becomes alarmed, and fancies he is about to be threatened with dysentery,

which he endeavours to check by doses of ipecacuanha and opium.

Under this treatment the griping frequency of stool, and appearance of blood, are somewhat relieved; but the purging soon increases, and a fever comes on, attended with a distressing short cough, nausea, distension of the stomach, flatulence in the intestinal canal, and total disrelish for animal food. Upon questioning the patient now, his fear of dysentery is extreme, and his desire to be relieved from the purging very great. He denies the existence of any pain in the side and shoulder, or any incompetency to lie on either side; but on placing him upon his back, with his head low, and then examining the region of the liver, by slightly though pretty firmly pressing about the left lobe towards the stomach, and desiring him to draw a deep inspiration at the same time, you find he flinches from the touch, and complains that his breath is interrupted by a pain stretching up to the right clavicle, the top of the shoulder, or shoulder blade.

He now conceives instantaneously the nature of his own complaint, and calls to recollection many instances of having felt slight pains about the clavicle and shoulder before, but consider-

ing them as rheumatic, he gave them no further attention.

It is to be observed that during the purging above described, there is, except at first, but a slight appearance of bile in the stools : even this soon disappears, and the stools become greyish, and afterwards of a lighter colour still. Upon a further continuance of the disease, however, the evacuations become slimy, offensive, and sometimes tinged with bile, though in most instances the fæculent part retains the light colour throughout.

There seems some reason for distinguishing affections of the convex from the concave side of the liver: the latter is the part affected in most instances of the disease above described, which makes it so necessary to have recourse to examination by the touch ; a measure, which at least in the hot countries, should be continually recommended in all suspicious and protracted complaints of the bowels.

It is from affections of the convex side, that the pain is most acute in the shoulder and side ; but the difficulty in this case, is generally in lying upon the *left* side, whereas in the other instance, it is more painful to lie upon the *right* side : there is also not unfrequently a

pain in the *left* shoulder, sometimes at its top, at others under the clavicle, and occasionally in the shoulder blade. When this is the case, there is rarely any affection of the corresponding shoulder; though this remark does not always hold good, for I have known both shoulders equally affected at the same time.

There is no disease that yields more decidedly to mercury than this, when recourse is had to it, in any reasonable time after the accession; but if its nature is to be disregarded until the pain in the side and shoulder come on distinctly, which it seldom fails to do, perhaps a day or two before the formation of a liver abscess, it becomes then extremely difficult to manage, and for the most part terminates fatally. The actual formation of matter is sometimes very sudden, but is usually preceded by rigors of different degrees of strength and duration: Hiccup is also an attending symptom in this case, particularly after the stomach is distended by any sort of food or drink.

There is, however, an abuse of mercury to be feared. It manifestly stimulates the liver to a high degree, and in several instances I have known hepatitis actually *commence at the moment* a *ptyalism* was produced for the cure of syphilis. In other cases it is common for persons in

India, on exposure to the sun, *after courses of mercury*, to be laid up with dangerous liver complaints, who never had the smallest affection of that viscus before. It is a fact that mercury can rarely be made to affect the salivary glands, when matter has actually formed itself in the liver.

As auxiliaries in affections of the liver, it should be remarked that the pain in the side and shoulder, and difficulty in breathing, is almost always powerfully relieved by the application of a blister to the region of the liver. In plethoric habits, blood-letting is first proper, and in all cases, a lax bowel is required, previous to the use of the blister.

M. F.





